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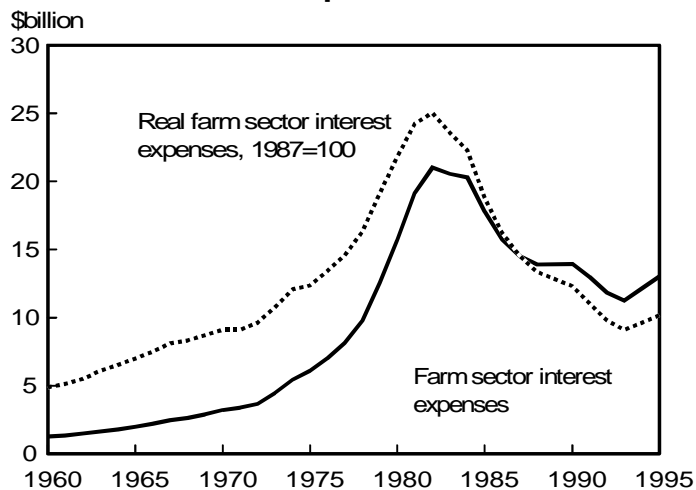
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# Agricultural Income and Finance

## Situation and Outlook Report

**Farm sector interest expenses**



## Contents

<b>Summary</b> .....	3
<b>Lender Overview</b>	
Growth Continues in 1995 as Demand for Farm Loans Expands .....	4
<b>Agricultural Lender Situation</b>	
Agricultural Banks Remain Highly Profitable .....	8
Small Agricultural Banks Are the Biggest Farm Lenders .....	10
Farm Credit System Profits Rise, Capital Building Continues .....	12
Districts' Performance Varies Amid Excellent Farm Credit	
System Performance .....	14
Farm Credit Administration Aggressively Pursues Farm Credit System	
Regulatory Relief .....	16
Farm Service Agency Credit Quality Improves .....	18
Life Insurance Company Farm Loan Portfolios Continue To Improve .....	21
<b>Farmer Mac</b>	
Farmer Mac Gets Another Chance .....	25
Farmer Mac Still Faces Hurdles .....	27
<b>Agricultural Interest Rates</b>	
Interest Rates on Farm Loans Declined Throughout 1995 .....	29
<b>Farmland Value Trends and Agricultural Lenders</b>	
Rising Farmland Values Help Lenders and Farmers with	
Real-Estate-Backed Farm Loans .....	31
<b>Special Articles</b>	
The Changing Structure of Nonreal Estate Credit Markets .....	33
Interest Rate Derivatives: Impacts on Farm Financial Risk and Credit .....	41
<b>List of Tables</b> .....	44
<b>Appendix Tables</b> .....	45

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## Summary

Financial institutions serving agriculture continued to experience improved conditions in 1995, and further gains are expected in 1996. Total farm business debt at yearend 1995 is estimated at \$151 billion, up 2.9 percent from a year earlier, but 22 percent below the 1984 peak. Commercial banks accounted for about 50 percent of the estimated \$4.3-billion increase in farm lending in 1995. Total farm business debt is expected to grow 2-3 percent in 1996. Creditworthy farmers have adequate access to loans, mostly from commercial banks, the Farm Credit System (FCS).

Agricultural lenders generally reported expanding demand for farm credit in 1995, especially for short- to intermediate-term loans (nonreal estate credit), which grew 4.2 percent. Real estate debt increased 1.8 percent. An exception was commercial banks where total loans outstanding increased 3.7 percent, or \$2.1 billion, with real estate loans providing just over 60 percent of the increase. Total farm debt held by commercial banks grew about 10 percent between the end of 1993 and the end of 1995, with real estate loans gaining 14.4 percent. During the same period, FCS total lending only expanded 5.3 percent, but its nonreal estate loan portfolio grew 22.8 percent. Lending by individuals and others (merchants, dealers, and other seller financing) grew 10.4 percent during the same span, with nonreal estate debt expanding 13.8 percent.

Interest rates on new loans to farmers declined throughout 1995. On average, interest rates on nonreal estate farm loans declined about 50 basis points, while rates on real estate farm loans declined 40-50 basis points. Interest rates on farm loans are expected to gradually decline throughout 1996, following the decline in rates paid on government and nonfarm private sector securities.

Agricultural banks had another good year in 1995. No agricultural bank failed for the second year in a row. The banks' annualized mid-1995 rate of return on assets of 1.2 percent matched their strong 1992-94 performance. At 11.7 percent, return on equity (ROE) was a bit below 1994's rate of 12.1 percent, but well above rates in the mid-1980s. The slight decline in ROE is not a concern because it reflects continued growth in bank capital rather than a drop in earnings. With nonperforming loans and loan loss provisions staying at 1.1 percent and 0.2 percent of total loans, respectively, agricultural banks show no signs of current or future problems.

Average loan-to-deposit ratios grew to 66.5 percent for agricultural banks on September 30, 1995, up from 64.3 percent a year earlier and 60 percent 2 years earlier. The loan-to-deposit ratio has increased from a low of 53.5 percent in 1987, but the current ratio remains below the high of just over 68 percent recorded in September 1968.

The Farm Credit System entered 1996 in strong financial condition. Loan quality continued to improve in 1995, and loan volume grew faster than inflation for the first time since the 1980s. Earnings recovered from the previous year's drop as operating efficiency improved. The system continues to build capital and reduce nonperforming assets. District level mergers continue. The Farm Credit Administration, the FCS regulator, has established regulatory reform as a major priority, with the goal of reducing the burden imposed by regulation whenever possible. Major regulatory initiatives in 1995 included reforming regulations concerning financially related services, capital adequacy, and eligibility and scope of financing.

Farm Service Agency (FSA) guaranteed lending volume surpassed \$1.9 billion in fiscal 1995, accounting for a record 77 percent of the agency's farm lending. Direct lending fell to a 30-year low during the year. Funding for fiscal 1996 is similar to last year and should be sufficient to meet demand in most programs.

FSA continued to whittle down its backlog of delinquent loans in direct lending with delinquent volume dropping 10 percent from last year. Losses on direct loans remained above \$1 billion during fiscal 1995, but losses on guaranteed loans fell. The overall quality of the \$6-billion guaranteed loan portfolio remains good. Legislative proposals being debated for the farm bill, if enacted, would make significant changes to FSA credit programs, particularly to the direct lending programs.

Legislation was passed in January 1996 to make Farmer Mac more competitive and stave off the possible failure of this government-sponsored enterprise. The legislation modifies Farmer Mac's operating structure in an attempt to lower costs, and provides for regulatory relief from higher pending capital standards. The legislation also outlines steps for recapitalizing the corporation within 2 years and for an orderly liquidation if Farmer Mac fails to recapitalize.

While the legislation should make Farmer Mac more competitive, the corporation still faces hurdles in becoming financially healthy over the next few years. Demand for fixed-rate loans--Farmer Mac's primary product--remains relatively weak and commercial banks--Farmer Mac's primary source of loans--continue to report ample lending capacity. Although there are signs these conditions are changing, Farmer Mac faces a competitive market for the limited number of potential borrowers that meet Farmer Mac's qualifications. As a result, Farmer Mac could have trouble attracting sufficient loan volume to demonstrate profitability within the 2-year period it has been granted. On the other hand, if Farmer Mac finds a way to rapidly expand, the legislation raises concerns about the corporation's safety and soundness because it dismantles safeguards originally put in place by Congress to keep Farmer Mac from becoming a liability to the U.S. Treasury.

## Growth Continues in 1995 as Demand for Farm Loans Expands

*Farm lenders experienced another profitable year and entered 1996 in financially sound condition. Total farm business debt is expected to grow 2-3 percent in 1996.*

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The financial condition of commercial agricultural lenders was strong in 1995, and additional gains are expected in 1996. However, each of the four major institutional farm lender categories--commercial banks, the Farm Credit System (FCS), the Farm Service Agency (Farm Credit Program [FSA-FCP--formerly the Farmers Home Administration--FmHA]), and life insurance companies--faces unique challenges.

The lender distribution of the farm sector's \$151 billion total farm business debt held on December 31, 1995, is summarized in table 1. Commercial banks account for 39.7 percent of all farm loans, making them the leading agricultural lender, followed by the FCS with 24.7 percent. Individuals and others are estimated to hold 22.6 percent of the total.

### **Lenders Interface with a Viable Farm Sector**

Farm lenders in 1996 are dealing with a farm sector whose overall financial health remains strong. Net farm income was \$39 billion in 1995 and is forecast to be \$37-\$47 billion in 1996. Net cash farm income is forecast at \$43-\$53 billion in 1996 compared with \$51 billion in 1995. Because net cash income compares revenues and expenses as they actually occur over the calendar year, it is subject to annual fluctuations that stem from changes in marketing patterns. Net cash income measures the total income farmers choose to receive in a given year, regardless of the level of production or the year in which the marketed output was produced. It approximates the income available to farmers for purchasing assets, retiring debt, and covering all other expenditures.

Cash receipts from farm marketings are projected at \$184-\$192 billion in 1996; the current forecast is \$184 billion for 1995. Because of tight wheat and feed grain stocks crop receipts will climb substantially moving from \$97 billion in 1995 to \$98-\$103 billion which would be a record high. But livestock receipts could be flat as record red meat and poultry production dampen prices. The forecast 1995 sales of \$87 billion is the midpoint of the 1996 forecast of \$85-89 billion.

Strong cash receipts will be partially offset by lower government payments, which are forecast at \$3-\$5 billion in 1996 compared with \$6 billion in 1995. Government spending in 1996 depends partly on pending budget and farm legislation. Overall, farm sector repayment capacity indicates that no major farmer or farm lender financial stress is anticipated.

### **Demand for Credit Increases, Especially for Production Loans**

Agricultural lenders generally found the demand for agricultural credit was stronger in 1995, especially for short- to intermediate-term loans (nonreal estate credit) where total outstanding loan volume increased 4.2 percent. Some 67.8 percent of the total dollar volume growth occurred in the

nonreal estate loan portfolio. Total outstanding loan volume of commercial banks increased \$2.1 billion in 1995, or 3.7 percent. The FCS reported total loans outstanding of \$57.1 billion on September 30, 1995, 4.6 percent above a year earlier. FCS long-term real estate loans, however, decreased 0.9 percent during the year ending September 30, 1995, reflecting stable demand for its mortgage credit. Among life insurance companies, total lending activity was up 1.4 percent during calendar 1995.

Demand for nonreal estate business loans should increase about 3 percent in 1996. Farmers are expected to spend between \$169 and \$177 billion in 1996 for agricultural inputs, compared with \$168 billion in 1995, spurred by higher feed grain prices, more planted acres, and higher nitrogen fertilizer prices. Under current programs, total planted area for the seven major program crops (wheat, rice, corn, sorghum, barley, oats, and cotton) and soybeans are expected to increase about 12 million acres in 1996.

Unit sales of farm tractors, combines, and other farm machinery increased in 1995, for the third year in a row. Demand improved in 1995 because of the farm income situation and more planted acres for all crops. Increased machinery sales help strengthen the demand for short- and intermediate-term farm loans. A larger share of this demand is now met by "captive" finance companies owned by the machinery companies as opposed to the more traditional institutional lenders. Total nonreal estate farm business debt grew 4.2 percent in 1995; individuals' and others farm debt (where the captive finance companies are included) expanded 6.5 percent that year. The demand for farm machinery loans should grow in 1996 because of increased crop receipts.

Stable activity in the land markets should create stable demand for real estate credit in 1995. Per acre U.S. farmland values increased 6.4 percent in 1994, rose an estimated 5 percent in 1995, and are expected to advance 3.6 percent in 1996. It is unclear, however, whether the value increases have led to corresponding increases in the demand for farm mortgage credit. A good share of the buyers were nonfarmers or larger operators who were able to pay in large part or in whole with cash and not via borrowing. Nationally, farm real estate debt should increase by about 1-2 percent in 1996.

### **Farm Debt Continues To Increase in Response to Greater Demand**

The expected 2- to 3-percent rise in total farm business debt in 1996 will be the sixth annual increase in the last 7 years after 5 successive years of net debt retirement. On a calendar year basis, outstanding loan volume for all lenders increased last year, except for the FSA. Commercial banks experienced a

6.4- percent increase in real estate lending in 1995, marking the thirteenth consecutive year of gains.

Total farm business debt is anticipated to rise to about \$154.6 billion by the end of 1996, the highest since 1986. The expected increase of \$3-4 billion during 1996 will be the fourth straight year of rising debt and follows an increase of \$4.3 billion in 1995. The 2.9-percent increase in 1995 is the second largest annual percentage gain in outstanding loans since 1982 and places the debt level about \$12 billion above its level 3 years earlier. In percentage terms, however, the increases of 1993-95 are small compared with the double digit levels of the 1970s.

Creditworthy farmers should have access to loans in 1996. Banks' loan-to-deposit ratios, despite some recent increases, reflect liquidity to meet increased credit needs. The FCS is offering farm customers competitive interest rates and credit arrangements in an effort to enhance loan quality and expand market share. Total life insurance company lending is expected to grow slightly in 1996.

The availability of direct FSA loans to family-sized farmers unable to obtain credit elsewhere will be about the same in fiscal 1996. Fiscal 1996 direct Operating Loan authority of \$579.2 million exceeds 1995's \$437.9 million in obligations. Direct Farm Ownership authority, at \$73.7 million, exceeds 1995 obligations of \$56.9 million, but falls short of relieving an application backlog. FSA's authority to guarantee loans made by commercial and cooperative lenders will be down somewhat in fiscal 1996, but should be sufficient to meet demand. An exception might be the guaranteed Farm Ownership program where fiscal 1996 authority is 4.4 percent below actual fiscal 1995 obligations of \$559.9 million.

The outlook for 1996 indicates that competition will remain keen for high-quality farm loans. Trends in the general economy are causing stable to lower interest rates, which will tend to sustain farm loan demand. Farmers who are good credit risks will be able to acquire credit in 1996. Lenders will have adequate funds and are not curtailing farm credit. Farmers will need to demonstrate adequate cash flow, and some marginal farm operators and beginning farmers will continue to face credit access problems. Lenders in some areas express some concern about current prospects for cow-calf operations and to a lesser extent regarding fed cattle and some hog operations.

### ***Commercial Banks Continue To Increase Market Share***

Since 1981, when their market share was 21.3 percent, commercial banks increased their market share of farm loans

for 14 straight years to 39.7 percent in 1995 (appendix table 1). Much of this shift occurred at the expense of the FCS, whose market share trended downward from a high of 34 percent in 1982 to 24.7 percent in 1995. Total FSA market share also decreased sharply--from a high of 16.3 percent in 1987 to 6.9 percent in 1995. The commercial bank farm loan portfolio grew 45.7 percent during 1987-95 while the FCS portfolio was 41.9 percent lower in 1995 than in 1982. FSA loans outstanding dropped 57.3 percent during 1985-95.

Within the real estate debt portfolio, the value of outstanding real estate loans held by commercial banks increased 196.2 percent (\$14.9 billion) by 1995 from its previous low in 1982, while FCS loans decreased 47.7 percent (\$22.2 billion) from their 1984 high (appendix table 2). The FCS real estate loan portfolio declined in 9 of the 11 years since 1984 while the FCS market share declined from 43.7 percent in 1984 to 30.8 percent in 1995. Life insurance company loans in 1995 were 24.7 percent below their 1981 high, but the portfolio increased 4.4 percent during 1992-95.

A number of important changes have occurred in the nonreal estate portfolios of the major farm lenders (appendix table 3). By the end of 1988, FCS nonreal estate loans had declined 58.8 percent (\$12.5 billion) from their 1981 peak, but they subsequently increased 47.6 percent (\$4.2 billion) during 1987-95. At the end of 1987, commercial bank loans had decreased 26.7 percent (\$10 billion) from their top figure in 1984, but they subsequently increased 36 percent (\$9.9 billion) during 1987-95. FSA nonreal estate loans decreased 63.4 percent (\$9.3 billion) during 1985-95, falling continuously over this period. In 1995, the FCS held 18 percent and commercial banks held 52.1 percent of total nonreal estate debt.

### ***Delinquencies and Chargeoffs Continue at Low Levels Except for FSA***

During 1985-95 FSA had the highest delinquencies in both dollars and share of the portfolio (table 2). This is expected given that USDA's FSA is the historical "lender of last resort" to the farm sector. Some 27.1 percent of FSA farm borrower cases were delinquent on September 30, 1995, with a principal of \$4.5 billion. Farm loan losses for commercial banks, FCS, and FSA for 1984-94 are shown in table 3. During 1985-89, agricultural loan chargeoffs by these lenders totaled \$13.8 billion. Almost all of the \$12 billion in losses during the 1990-95 period were recorded by FSA.

The farm sector's financial indicators have shown general strength in recent years, but now are giving some mixed signals. Total farm debt is increasing, equity is growing more rapidly than the rate of inflation, the debt load relative to income is up slightly, farm income is down somewhat, but the debt-to-asset ratio and total rate of return are at levels considered normal.

Figure 1

### Total farm business debt increasing

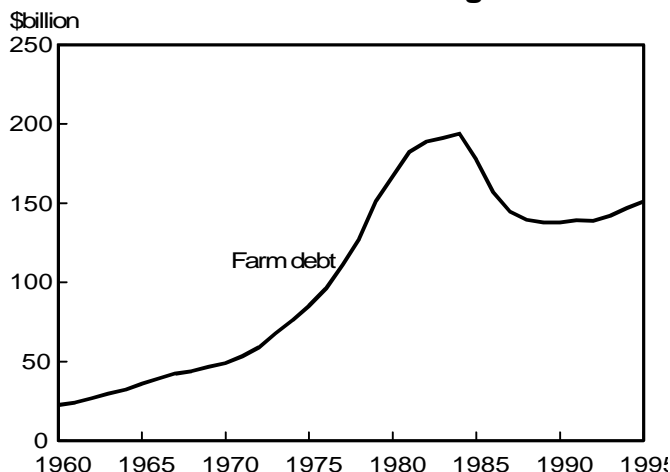


Figure 2

### Annual change in farm debt

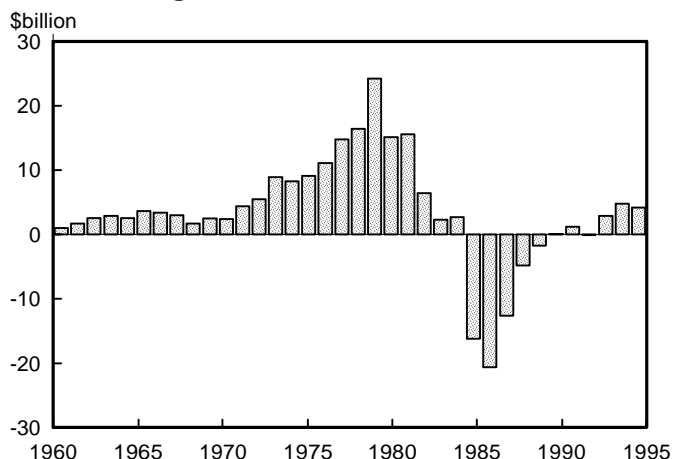


Figure 3

### Farm sector balance sheet

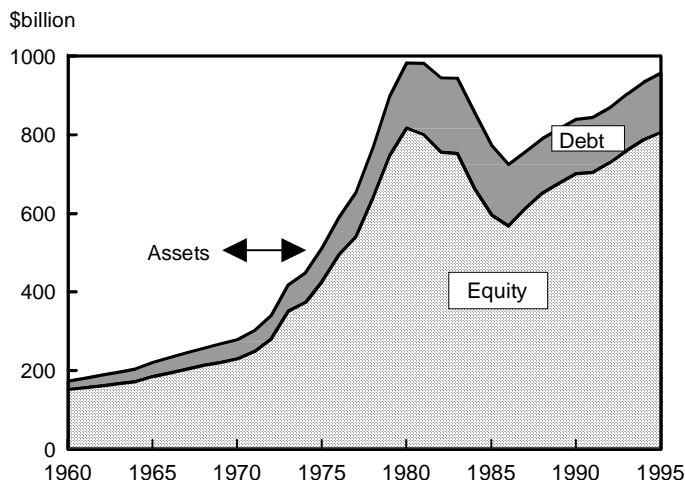


Figure 4

### Farmers' debt load increasing

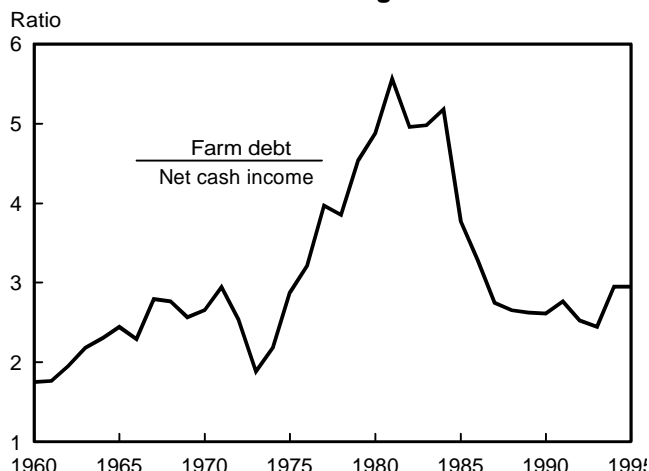


Figure 5

### Real net farm and real net cash incomes lower

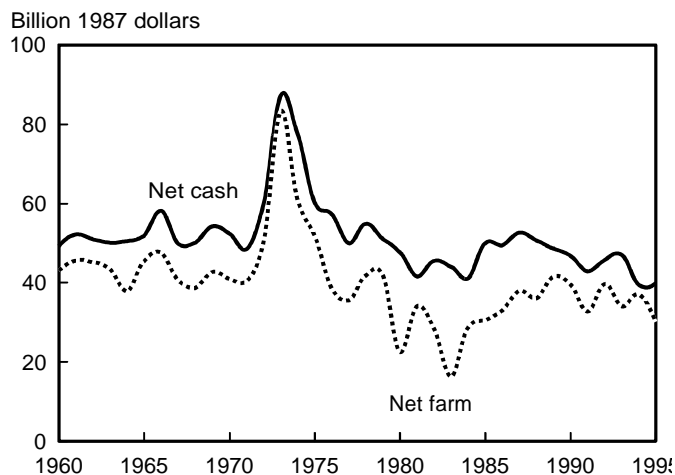
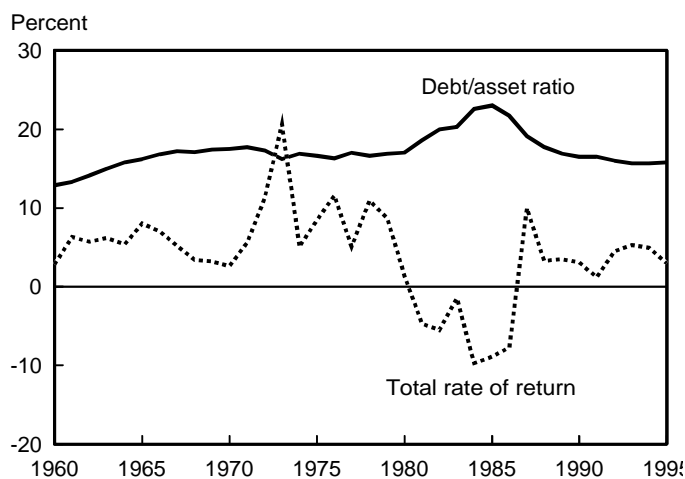


Figure 6

### Farm sector debt to assets and total rate of return at normal levels



**Table 1—Distribution of farm business debt, by lender, December 31, 1995 1/**

Lender	Type of debt		Total
	Real estate	Nonreal estate	
	<i>Percent of total</i>		
Commercial banks	14.8	24.8	39.7
Farm Credit System	16.1	8.6	24.7
Farm Service Agency	3.4	3.6	6.9
Life insurance companies	6.0	---	6.0
Individuals and others	11.9	10.7	22.6
Commodity Credit Corporation	0	---	2/
Total	52.3	47.7	100.0

1/ Preliminary. Due to rounding some subcategories may not add to totals. 2/ This excludes CCC crop loans which are estimated at \$4 billion at the end of 1995.

**Table 2—Delinquent farm loan volume, by lender, 1986-95**

Lender	Yearend 1/									Mid-year 1995 2/
	1986	1987	1988	1989	1990	1991	1992	1993	1994	
	<i>Billion dollars</i>									
Commercial banks 3/ 4/	2.2	1.4	1.0	0.7	0.6	0.7	0.6	0.5	0.4	0.5
Farm Credit System 5/	7.0	5.2	3.3	2.5	2.5	2.2	1.9	1.5	1.1	1.0
Life insurance companies 6/	1.8	1.3	0.8	0.4	0.4	0.4	0.3	0.2	0.2	0.2
Farm Service Agency 7/	12.0	11.8	12.5	11.1	8.1	7.3	6.6	5.8	4.4	4.5
	<i>Percentage of outstanding loans</i>									
Commercial banks 3/ 4/	7.0	4.8	3.3	2.3	1.9	1.9	1.8	1.4	1.1	1.3
Farm Credit System 5/	13.8	11.8	8.0	6.1	6.1	5.4	4.6	3.6	2.7	2.4
Life insurance companies 6/	17.0	14.3	8.9	4.7	4.2	3.8	3.3	2.2	2.6	2.9
Farm Service Agency 7/	42.9	45.8	49.8	47.8	41.3	41.7	42.5	41.0	34.8	39.0

1/ End of fiscal year (Sept. 30) for the Farm Service Agency (FSA) and end of the calendar year (Dec. 31) for the other lenders. 2/ June 30 except for FSA. Delinquencies were reported by institutions holding most of the farm loans in this lender group. Data shown are obtained by assuming that the remaining institutions in the group experienced the same delinquency rate. 4/ Farm nonreal estate loans past due 90 days or more or in nonaccrual status, from the Reports of Condition and Income submitted by insured commercial banks. 5/ Data shown are nonaccrual loans and exclude loans of the Bank for Cooperatives. 6/ Loans with interest in arrears more than 90 days. 7/ Prior to 1988 a loan was delinquent when a payment was more than \$10 and 15 days past due. Beginning in 1988, a loan is delinquent if a payment is more than 30 days past due. Data shown are for September 30; thus, they avoid the yearend seasonal peak in very short-term delinquencies and so are more comparable with those shown for other lenders. The FSA data reflect the total outstanding amount of the loans that are delinquent (as do the data shown for other lenders), rather than the smaller amount of delinquent payments that is often reported as FSA "delinquencies."

**Table 3—Farm loan losses (net chargeoffs), by lender, 1984-95**

Year	Commercial banks 1/		Farm Credit System 2/		Farm Service Agency 3/		Exhibit: Life insurance company foreclosures 4/		
Million dollars (Percent of loans outstanding at end of period) 5/									
1984	900	(2.3)	428	(0.5)		128	(0.5)	289	(2.5)
1985	1,300	(3.3)	1,105	(1.6)		257	(0.9)	530	(4.8)
1986	1,195	(3.4)	1,321	(2.3)		434	(1.5)	827	(7.9)
1987	503	(1.6)	488	(0.9)		1,199	(4.3)	692	(7.5)
1988	128	(0.5)	413	(0.8)		2,113	(8.4)	364	(4.0)
1989	91	(0.3)	(5)	(0.0)	6/	3,297	(12.4)	204	(2.3)
1990	51	(0.2)	21	(0.04)		3,199	(13.5)	85	(0.9)
1991	105	(0.3)	47	(0.09)		2,289	(10.4)	95	(1.0)
1992	82	(0.2)	19	(0.04)		1,887	(9.1)	148	(1.8)
1993	54	(0.2)	-2	(0.0)	6/	1,768	(9.4)	96	(1.1)
1994	69	(0.2)	-32	(-0.1)		1,353	(7.5)	42	(0.5)
1995 7/	12	(0.0) 8/	-2	(0.0)	6/	1,041	(6.0)	65	(0.7)

1/ Calendar year data for nonreal estate loans. 2/ Calendar year data. 3/ Fiscal year data beginning October 1. Includes data on the insured (direct) and guaranteed farm loan programs. 4/ Loan chargeoff data are not available for life insurance companies. 5/ Loan loss data rounded to nearest million dollars. 6/ Less than 0.1 percent. 7/ Commercial bank data through June 30, 1995, and Farm Credit System and life insurance company data through September 30, 1995. 8/ Less than 0.1 percent.

Sources: American Council of Life Insurance, Board of Governors of the Federal Reserve System, The Farm Credit Council, and the Farm Service Agency.

## **Agricultural Banks Remain Highly Profitable**

*Farm banks have significantly reduced their delinquent loan portfolio.*

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Agricultural banks were very profitable in 1995, but not quite up to record performance by all measures. Low loan loss provisions and good interest rate spreads supported large profits for agricultural lenders. An annualized mid-1995 rate of return on assets (ROA) of 1.2 percent matched the strong 1994 average (table 6). Return on equity capital (ROE) declined to 11.7 percent, trailing 1992's high of 13.1 percent but well above a few years earlier.

Continued strength in ROA reflects substantial loan quality in farm bank loan portfolios. Loans in nonperforming status at midyear stayed at 1.1 percent of total loans (table 4), besting the industrywide rate of 1.3 percent (appendix table 6). As measured by ROA and loan quality, agricultural banks also matched the performance of the small nonagricultural banks to which they are often compared.

As farmers continue to slowly assume more debt, the increasing share of farm debt captured by commercial banks helped raise loan-to-deposit ratios at agricultural banks from 62.1 to 65.5 percent over the past year. Because this is an average, higher loan ratios at some small banks may lead their managers to consider slowing lending activity. But several surveys suggest that most agricultural bankers have the capacity and willingness to extend additional farm credit.

### ***What Is an Agricultural Bank?***

The Board of Governors of the Federal Reserve System (FRB) classifies a bank as agricultural if its ratio of farm loans to total loans exceeds the unweighted average of the ratio at all banks on a given date--17.12 percent on June 30, 1995 (table 5). The Federal Deposit Insurance Corporation (FDIC) criterion is a constant 25-percent ratio of agricultural loans to total loans. Unless otherwise indicated, the FRB agricultural bank definition is used throughout this report. Most farm banks retain much larger agricultural shares in their loan portfolios and therefore remain sensitive to conditions in the agricultural sector of the economy. Farm loans averaged 37 percent of total loans at all farm banks in 1995, and reached 49 percent for farm banks with below \$25 million in assets (table 7).

Because the dollar amount of outstanding farm loans typically peaks in the summer and declines the rest of the year as production loans are paid down, the use of June data for 1995 (rather than end of year) in table 5 distorts recent trends in the number of agricultural banks. For the 6 months ending June 30, 1995, farm banks declined by only 60 to 3,488 using the FRB definition and by 37 to 2,789 using the FDIC definition. Comparing June 1995 to June 1994 (not shown in the table) shows much larger declines under both definitions; 201 fewer

FRB farm banks and a drop of 165 following FDIC's approach to counting agricultural banks. The trend toward fewer agricultural banks reflects a drop in the number of commercial banks over the last decade due to mergers and failures.

### ***Farm Loan Quality Continues To Improve***

Farm loan quality continued to look solid through the first half of 1995. Only 1.3 percent of all commercial bank agricultural production loans were delinquent (table 2). This was up from 1.1 percent at the end of 1994 but below the 1.5-percent level of June 1994.

Net chargeoffs of farm production loans fell to less than \$15 million (table 3) at all commercial banks in the first 6 months of 1995 from \$30 million in first-half 1994 (not shown), but this number remains negligible relative to outstanding loans and to chargeoffs observed during the farm crisis of the mid-1980s. Loan loss provisions remained at 0.2 percent for agricultural banks, reflecting management's continued positive outlook for future loss rates (table 6).

### ***Profitability Approaches 1994 Results***

Agricultural bank profits were near 1994 levels, with ROA the same at 1.2 percent and an overall rate of return on equity (ROE) of 11.7 percent, both annualized from midyear figures. ROE for small nonagricultural banks exceeded the midyear ROE for agricultural banks, and matched agricultural banks in ROA with a ratio of 1.2 percent. Both bank types increased their average capital-to-asset ratio during 1995, further increasing their solvency.

Agricultural banks' loan-to-deposit ratios increased to 65.5 percent, compared with 69.7 percent at small nonagricultural banks. The ratio of loans to assets, 56.2 percent at agricultural banks and 59.6 percent at small nonagricultural banks, reveals the relative bank liquidity of these two groups. Both are highly liquid and eager to make additional loans, but expect loan demand to remain stable.

No agricultural banks failed in 1995 (appendix table 8), and none failed a year earlier. This reflects continued improvement in farm bank loan quality and wide net interest margins, but also follows national trends of a solid recovery in the banking industry. Total nonagricultural bank failures dropped to 5 in 1995 from 11 in 1994. Only 4 agricultural banks and 13 nonfarm banks were categorized as weak at midyear, compared with 2 and 17, respectively, at the end of 1994 (appendix table 7).



Strong profits and loan quality, and low expectations for future loss rates, allowed commercial banks to keep loan loss provisions at low levels.

**Table 4—Nonperforming loans as a percentage of total loans, by type of bank, 1987-95 1/**

Type of bank	1987	1988	1989	1990	1991	1992	1993	1994	1995
	<i>Percent</i>								
Agricultural									
Total nonperforming 2/	3.8	2.7	2.3	2.0	1.9	1.8	1.4	1.1	1.1
Past due 90 days 3/	1.2	.8	.7	.6	.6	.6	.4	.4	.4
Nonaccrual	2.6	1.9	1.5	1.3	1.3	1.2	1.0	.7	.7
Small nonagricultural 4/									
Total nonperforming 2/	2.5	2.2	2.1	2.0	2.3	2.0	1.7	1.3	1.1
Past due 90 days 3/	.8	.7	.7	.6	.7	.5	.4	.3	.3
Nonaccrual	1.7	1.5	1.4	1.4	1.6	1.5	1.3	1.0	.8

1/ Data are weighted by bank asset size using month-end June balances. 2/ Columns may not equal totals due to rounding. 3/ Still accruing interest. 4/ Banks with less than \$500 million in assets that were not agricultural by the Federal Reserve Board definition.

Source: Calculated from the Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

**Table 5—Number of agricultural banks, by definition, 1987-95 1/**

Item	1987	1988	1989	1990	1991	1992	1993	1994	1995 2/
Commercial banks (Number)	13,505	12,961	12,635	12,270	11,849	11,400	10,917	10,400	10,117
FRB Agricultural banks (Number)	4,480	4,337	4,180	4,067	3,952	3,851	3,723	3,548	3,488
FRB farm loan ratio (Percent)	15.60	15.73	15.84	15.94	16.57	16.73	17.04	17.00	17.12
FDIC Agricultural banks (Number)	3,335	3,236	3,172	3,090	3,116	3,019	2,947	2,826	2,789

1/ Includes domestically chartered, FDIC-insured commercial banks with deposits, assets, and loans. 2/ 1995 figures are for June 30, all others are December 31.

Source: Calculated from the Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System (FRB).

**Table 6—Selected bank performance measures, by type of bank, 1987-95 1/**

Performance measure	1987	1988	1989	1990	1991	1992	1993	1994	1995 2/
	<i>Percent</i>								
Rate of return on equity capital									
Agricultural banks	7.6	10.0	10.7	10.7	11.4	13.1	12.8	12.1	11.7
Nonag small banks	8.1	8.7	10.1	8.5	9.1	12.0	12.9	12.8	12.6
Rate of return on assets									
Agricultural banks	.7	.9	1.0	1.0	1.0	1.2	1.2	1.2	1.2
Nonag small banks	.6	.7	.8	.7	.7	1.0	1.1	1.1	1.2
Provisions for loan losses as a percentage of loans									
Agricultural banks	1.4	.8	.7	.5	.5	.4	.3	.2	.2
Nonag small banks	1.0	.9	.8	1.0	1.0	.8	.5	.4	.3
Capital as a percentage of assets									
Agricultural banks	9.8	10.0	10.1	9.9	10.1	10.4	10.9	10.8	11.4
Nonag small banks	8.8	8.8	9.0	9.0	9.2	9.6	10.1	10.1	10.6

1/ Rate of return on equity is net income after taxes as a percentage of the average of total equity capital at the beginning and end of the year. Rate of return on assets is net income after taxes as a percentage of total assets on December 31. 2/ 1995 ratios are June 30 data, annualized.

Source: Calculated from the Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

## Small Agricultural Banks Are the Biggest Farm Lenders

*Agricultural banks with assets up to \$300 million hold over half of all commercial bank farm loans, but nonagricultural bank shares increased slightly.*

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Both agricultural and nonagricultural banks increased the total value of their farm lending portfolios during June 1994-June 1995. However, agricultural banks reported only a \$0.9-billion increase, compared with a \$2.9-billion gain between June 1993 and June 1994. The \$1.4-billion gain over 1994 for nonagricultural banks left them with 44.4 percent of commercial bank farm loans (table 7), a 0.6-percent increase from the previous year.

The largest size class of nonagricultural banks holds just over one-quarter of all commercial bank farm debt (table 7). With less than 19 percent of this debt, the other nonagricultural bank classes trail the combined 23.5 percent market share of the two smallest classes of agricultural banks.

### **Solvency Measures Look Good for All Bank Groups**

Bank capital reduces the risk of bank failure by cushioning losses and supports liquidity by maintaining borrower confidence. Capital-to-asset ratios for midyear 1995 show that commercial banks -- regardless of size -- are solvent (table 8). Small commercial banks had capital-to-asset ratios between 11.0 and 12.5 percent, compared with a little over 10 percent for the three largest bank categories. A narrower measure, the ratio of equity capital to assets, averaged 11.5 percent of assets for the smallest banks but only 7.2 percent for the highly leveraged large banks.

Loan-to-deposit ratios suggest that small commercial banks are more liquid than larger banks. However, nondeposit funding sources and secondary markets for loan sales have weakened the loan-to-deposit ratio's traditional role as a liquidity measure. Some banks hold more loans, resulting in higher loan-to-deposit ratios. Other banks reduce risk and their loan-to-deposit ratios by selling loans and acquiring securities instead. Large banks use nondeposit sources of loanable funds liberally, as witnessed by their much lower value of deposits as a percentage of liabilities (table 8).

### **Largest Banks Most Profitable**

Large banks lend a greater percentage of their asset base, but they typically earn lower rates of return on those assets (ROA) than do smaller banks. However, in the first part of 1995 the smallest banks registered the lowest ROA and the best result came from banks with \$300-\$500 million in assets. Large banks improved their profitability in part by getting a handle on past real estate loan problems. As of June 30, 1995, 1.8 percent of big bank real estate loans were nonperforming (appendix table 6), down from 2.6 percent a year earlier. Rate of return on equity (ROE) increased uniformly with bank size (table 9), helped by greater leverage in the larger banks.

The smallest banks, those with \$25 million or less in assets, include 1,216 agricultural banks and 677 nonagricultural

banks (table 7). The smallest agricultural banks provided about 8 percent of commercial bank loans to agriculture. Agricultural banks achieved an average annualized ROA of 1.21 percent and ROE of 11.54 percent. Agricultural banks with less than \$25 million in assets earned an ROA of 1.12 percent, less than for all nonagricultural bank size classes except those with \$300 to \$500 million in assets, which achieved an ROA of 0.92 percent.

### **Current Banking Issues**

As a result of interstate banking and branching legislation signed by the President in 1994, bank holding companies as of September 1995 may purchase, and operate as separate bank affiliates, banks in all States. Most States already permitted interstate banking to some extent, but the Federal legislation eliminated State requirements on reciprocity and location of the acquiring holding company. Interstate branching through bank mergers will be permitted beginning in June 1997 unless the State passes legislation opting out of interstate branching. While interstate banking will increase the pace of bank consolidation, agricultural banks are typically too small to attract attention from the mostly large banks that will actively participate in interstate banking. Further, independent banks have competed successfully in New York and other States with substantial intrastate branching.

Federal bank supervisory agencies revised Community Reinvestment Act (CRA) regulations to simplify compliance and to encourage lending to underserved areas. The 1995 final regulations specify streamlined CRA exams for banks with less than \$250 million in assets (which includes most agricultural banks). Larger banks must provide new agricultural and small business lending data. Because these data will be reported separately for a bank's rural market areas, the rural offices of larger banks will face scrutiny that may encourage increased rural lending.

The 1996 session of Congress will address several banking issues that received serious attention in 1995. Congress came close to revising the Glass-Steagall Act, which limits bank activity in the insurance and securities industries. Legislation to simplify banking regulations also has widespread support in the current political environment. Disagreements over specific proposals pushed both bills into 1996.

The banking industry is way ahead of thrifts in achieving mandated levels of reserves in their respective deposit insurance funds. Banks gained a competitive advantage in 1995 through lower deposit insurance premiums and will oppose attempts to resolve this dilemma by merging the two insurance funds. Banks fought 1994 and 1995 Farm Credit System proposals to gain expanded powers for its members and will do so again in 1996. In fact, banks tried to take the initiative in this dispute by requesting greater access to long-term funds through the Farm Credit System.

Small agricultural banks still hold the majority of farm loans, despite the declining number of agricultural banks.

**Table 7—Agricultural lending of agricultural and nonagricultural banks, by bank size, June 30, 1995 1/**

Total assets	Agricultural banks					Nonagricultural banks				
	Banks	Total ag loans	Avg. ag loans	Ag lending share 2/	Ag loans/total loans	Banks	Total ag loans	Avg. ag loans	Ag lending share 2/	Ag loans/total loans
<i>Million dollars</i>	<i>Number</i>	<i>---Million dollars---</i>		<i>-----Percent-----</i>		<i>Number</i>	<i>---Million dollars---</i>		<i>-----Percent-----</i>	
Under 25	1,216	5,212	4.3	8.2	48.8	677	352	.5	0.6	5.8
25-50	1,173	9,785	8.3	15.3	42.3	1,324	1,270	1.0	2.0	4.5
50-100	777	10,870	14.0	17.1	36.5	1,786	2,857	1.6	4.5	3.8
100-300	300	7,764	25.9	12.2	31.2	1,828	5,115	2.8	8.0	2.8
300-500	16	1,007	62.9	1.6	29.1	371	2,228	6.0	3.5	2.5
Over 500	6	782	130.3	1.2	19.8	643	16,508	25.7	25.9	.8
Total	3,488	35,420	10.1	55.6	36.9	6,629	28,332	4.3	44.4	1.2

1/ Figures are weighted within size class. 2/ This represents the percentage of total commercial bank agricultural loans held by this size group of banks.

Source: Calculated from the Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

**Table 8—Selected commercial bank solvency and liquidity ratios, by bank size, June 30, 1995 1/**

Total assets	Banks	Capital/ asset 2/	Equity/ asset	Loan/ deposit	Loan/ asset	Deposit/ liability
<i>Million dollars</i>	<i>Number</i>	<i>-----Percent-----</i>				
Under 25	1,893	12.5	11.5	62.5	54.0	97.7
25-50	2,497	11.4	10.5	64.3	56.0	97.3
50-100	2,563	11.0	10.1	66.4	57.7	96.6
100-300	2,128	10.5	9.2	69.3	59.5	94.9
300-500	387	10.4	8.9	74.4	61.6	91.2
Over 500	649	10.2	7.2	91.7	60.4	71.2
Total	10,117	10.4	7.7	86.2	60.1	75.8

1/ Weighted average within size class. 2/ Total capital includes equity capital, allowance for loan and lease losses, minority interest in consolidated subsidiaries, subordinated notes and debentures, and total mandatory convertible debt.

Source: Calculated from the Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

**Table 9—Selected commercial bank profitability and efficiency measures, by bank size, June 30, 1995 1/**

Total assets	Return on assets 2/	Return on equity 3/	Asset utilization 4/	Noninterest income to total income	Interest expense to total expense	Interest expense to interest income
<i>Million dollars</i>				<i>Percent</i>		
Under 25	1.03	8.97	8.38	11.77	45.25	41.59
25-50	1.11	10.63	8.31	10.26	48.15	42.44
50-100	1.19	11.87	8.50	12.25	47.83	42.47
100-300	1.18	12.32	8.55	13.01	47.60	42.47
300-500	1.26	13.49	8.75	15.09	48.07	42.89
Over 500	1.09	14.40	9.08	22.72	49.54	50.14
Total	1.11	13.85	8.98	20.90	49.20	48.59

1/ All ratios are on an annualized basis and weighted within class size. 2/ Rate of return on assets is net income after taxes as a percentage of total assets. Return on equity is net income after taxes as a percentage of total equity. 4/ Asset utilization is gross income as a percentage of total assets.

Source: Calculated from the Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

## Farm Credit System Profits Rise, Capital Building Continues

*The Farm Credit System's profits have recovered and its capital position continues to improve as loan volume growth exceeds the rate of inflation for the first time since the early 1980s. Congress has passed a regulatory relief bill.*

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The Farm Credit System (FCS) entered 1996 in strong financial condition. Loan volume and loan portfolio quality have improved. Earnings rebounded from last year, and capital levels continue to rise. Nonperforming assets continue to decline despite a cost/price squeeze in the livestock sector and smaller harvests of some major commodities in 1995.

FCS income has surpassed \$1 billion each year since 1993 and will again for 1995 (table 11). Net income before extraordinary items increased nearly 10 percent for the first 9 months of 1995. The 1994 results also reflect a \$72-million charge associated with restructurings and merger implementations (for the merger of the Spokane and Omaha FCBs to form AgAmerica, for the merger of the Louisville FCB into AgriBank and for accelerated retirement benefits, severance pay, and other costs associated with restructuring, mostly at the Baltimore FCB). In contrast, the 1995 results reflect only \$6 million of such charges in the first 9 months.

Since 1990, FCS net income has been dominated by solid operating results led by strong performance in net interest income. Net income remained solid in both 1994 and 1995. The increase in net income in 1995 resulted from increases in both net interest and noninterest income as well as decreases in provisions for loan losses and in noninterest expenses. The total annualized interest rate spread declined from 3.07 percent for the first 9 months of 1994 to 3.02 percent for the first 9 months of 1995, but remains high enough to support system earnings.

For the first time since suffering substantial losses in loan volume in the mid-1980s, the FCS has experienced an inflation-adjusted increase in total loan volume (table 10). FCS loan volume grew 4.5 percent from \$54.68 billion at yearend 1994 to \$57.12 billion as of September 30, 1995. However, long-term real estate loans continued to decline while short and intermediate term loans and loans to cooperatives experienced substantial growth.

Capital adequacy has been a major regulatory concern. By September 30, 1995, FCS at-risk capital, including loss allowances and the FCS insurance fund, stood at \$11.4 billion or 19.63 percent of loans outstanding (table 12). Combined surplus capital and loss allowances now exceed the 1985 peak of \$6.9 billion by 17 percent despite the 25-percent decline in loan volume.

Nonperforming loans (nonaccrual loans plus accrual loans over 90 days past due) continue to decline in dollar terms and as a percent of loans outstanding (table 12). Such loans stood at \$955 million on September 30, 1995, 22 percent below a year earlier. Nonperforming loans accounted for 1.65 percent of total loans outstanding.

### **FCS Regulatory Relief Bill Passed by Congress**

On January 26, 1996, Congress passed the "Farm Credit System Reform Act of 1996" which the President signed on February 10, 1996. This legislation addresses both FCS regulatory issues and the restructuring of Farmer Mac (see Farmer Mac discussion below). Key provisions affecting the FCS include lengthening the maximum time between mandatory Farm Credit Administration (FCA) examinations of FCS institutions from 12 to 18 months and allowing the FCS Insurance Corporation (FCSIC) to reduce premiums or return excess insurance funds to member institutions after the Farm Credit Insurance Fund has reached a secure level.

The Act also removes regulations that FCS institutions consider overly burdensome and costly. Such regulations include requirements to collect borrower financial statements, to notify borrowers 10 days in advance of interest rate changes on adjustable-rate loans, and to provide all stockholders with FCS quarterly financial statements. Regulations are also removed that limit dividends, member businesses, and voting practices of eligible farmer-owned cooperatives, and that require approval by outside entities for business decisions of FCS institutions such as joint management agreements, appointment of association officers and the setting of their compensation, or making of loans to certain utilities. Associations will be allowed to form joint administrative service entities to share overhead costs, and FCS institutions will be allowed to originate loans for sale to a secondary market without requiring a stock purchase or providing borrower rights.

A requirement legislated in the wake of the savings and loan crisis that FCA and FCSIC be governed by separate boards of directors is repealed because of its cost and the redundancy associated with its implementation. The act strengthens safety and soundness by limiting "golden parachute" payments for executives of failed FCS institutions and clarifying FCSIC's role as receiver or conservator for failed FCS institutions.

Many of the provisions in the act will manifestly decrease business costs for FCS institutions, including the costs of examinations, insurance premiums, overhead expenses, asset-liability management, and providing stockholder information while having potentially minimal impact on safety and soundness. To maintain safety and soundness, a greater burden is placed directly on FCA and its board of directors. The lack of an independent FCSIC board means less independent oversight of FCS conditions. FCA has indicated that examination schedules will only be relaxed when warranted by the risk to stockholders, bondholders, and the public.

Loan volume and at-risk capital continue to improve. Income recovers, and operating efficiency improves dramatically.

**Table 10—Farm Credit System loan volume, by loan type, December 31, 1989-94 and September 30, 1995**

Loan type	1989	1990	1991	1992	1993	1994	1995
<i>Billion dollars</i>							
Long-term real estate	30.24	29.42	28.77	28.66	28.81	28.40	28.15
Short and intermediate term	10.02	10.67	11.22	11.11	11.43	12.39	13.80
Loans to cooperatives	10.44	11.08	11.47	12.63	13.03	13.89	15.16
Total	50.70	51.17	51.46	52.40	53.27	54.68	57.12

Sources: Federal Farm Credit Banks Funding Corporation, Farm Credit System Annual Information Statement and Farm Credit System Quarterly Information Statement, various dates.

**Table 11—Farm Credit System income statement, December 31, 1989-94 and September 30, 1995**

Item	1989	1990	1991	1992	1993	1994	1995 1/
<i>Billion dollars</i>							
Total interest income	6.27	6.13	5.51	4.72	4.35	4.68	5.53
Less interest expense	-5.26	-4.89	-3.95	-2.93	-2.39	-2.72	-3.54
Net interest income	1.01	1.24	1.56	1.79	1.96	1.96	1.99
Less provision/plus reversal for loan losses	0.29	0.04	-0.05	-0.02	-0.04	-0.05	- 0.01
Less loss/plus gain on other property	0.07	0.03	0.02	0.01	0.00	0.00	0.00
Plus other income	0.15	0.16	0.16	0.22	0.21	0.14	0.17
Less other expense	-0.75	-0.75	-0.79	-0.82 2/	-0.84	-0.92 3/	-0.81 4/
Less debt repurchase	0.00	-0.04	0.00	-0.04	-0.02	0.00	0.00
Less taxes	-0.07	-0.07	-0.09	-0.15	-0.15	-0.13	-0.13
Net income	0.70	0.61	0.81	0.99	1.11 5/	1.01	1.21

1/ Annualized rate based on first three quarters' performance. 2/ Includes \$.028 billion in one-time merger implementation costs associated with the Agribank merger. 3/ Includes \$.072 billion in one-time merger implementation and restructuring costs. 4/ Includes \$.006 billion in one-time merger implementation and restructuring costs. 5/ Does not include one-time net income of \$104 million from changes in accounting for income taxes and nonpension post retirement benefits.

Sources: Federal Farm Credit Banks Funding Corporation, Farm Credit System Annual Information Statement and Farm Credit System Quarterly Information Statement, various dates.

**Table 12—Farm Credit System financial indicators, December 31, 1989-94 and September 30, 1995**

Item	1989	1990	1991	1992	1993	1994	1995
<i>Percent</i>							
At-risk capital/total loans 1/	10.52	11.95	14.09	15.91	17.87	19.06	19.63
Percent of loans in nonaccrual status or over 90 days past due	5.54	5.39	4.70	3.84	3.22	1.95	1.67 2/
Other expense/total loans 3/	1.47	1.46	1.53	1.51	1.56	1.55	1.43 2/

1/ At-risk capital includes allowances for losses on acquired property and loans, surplus and unprotected borrower stock and participation certificates, and the Insurance Fund. 2/ Annualized rate based on first three quarters' performance. 3/ Excludes one-time merger implementation and restructuring costs.

Sources: Federal Farm Credit Banks Funding Corporation, Farm Credit System Annual Information Statement and Farm Credit System Quarterly Information Statement, various dates.

## **Districts' Performance Varies Amid Excellent Farm Credit System Performance**

*Net income, loan portfolio quality and total at-risk capital improve, in many cases dramatically. Total lending increases strongly at St. Paul, Bank for Cooperatives, and CoBank.*

As of September 30, 1995, the FCS institutions that lend directly to farmers included an Agricultural Credit Bank (ACB), five district Farm Credit Banks (FCB's), and their related, local lending associations. The system-level statistics hide differences in performance among FCS districts. This section compares the performance of the FCS banks and their related associations for the 9 months ending September 30, 1995, and September 30, 1994.

Mergers eliminated two more district FCB's since September 30, 1994. The first ACB was formed on January 1, 1995, by the merger of the Springfield, Mass., FCB, the Springfield Bank for Cooperatives (BC), and CoBank, BC, to form CoBank, ACB. An ACB is the result of a merger between at least one FCB and at least one BC. Such mergers were authorized by the Farm Credit Act of 1987. In a second merger, the Columbia and Baltimore FCB's formed AgFirst, FCB, on April 1, 1995.

Total loan volume ranged from \$14.6 billion at CoBank to \$2.3 billion at the St. Paul BC (table 13). Among banks serving primarily agricultural producers, AgriBank had the largest loan volume at \$13.9 billion, and Wichita had the smallest at \$3.6 billion. While aggregate loan volume increased 4.5 percent, most districts experienced minimal changes. Declines in loan volume occurred in the AgAmerica (down 0.98 percent) and Western (down 3.14 percent) districts. However, reductions in nonaccrual loans accounted for a substantial proportion of the reduction in loan volume in both these districts. Impressive growth occurred at both CoBank (up 10.5 percent) and the St. Paul BC (up 34.89 percent).

Aggregate nonaccrual loans decreased 23 percent for the year ending September 30, 1995, marking the fourth year of impressive improvements in loan portfolio quality. Previously, aggregate nonaccrual loans had fallen 27 percent (for the year ending September 30, 1994), 23 percent (for the year ending September 30, 1993), and 18 percent (for the year ending September 30, 1992). Nonaccrual loans now account for 1.56 percent of overall loan volume. Only the AgAmerica and AgriBank districts have ratios exceeding 2 percent. Each district and the St. Paul BC reduced nonaccrual loan volume by at least 9 percent.

At-risk capital continues to accumulate faster than loans outstanding. At-risk capital measures all resources that can be liquidated without impairing bondholders. Such resources include unprotected borrower stock and surplus as well as allowances for losses on loans. The all-district level of at-risk capital increased 7.19 percent and the all-district ratio of at-risk capital to total assets increased by nearly 1.5 percent.

The ratio of at-risk capital to total assets is a measure of the cushion between stockholders and bankruptcy. This ratio exceeded 17 percent for each district not engaged in lending to cooperatives. Both CoBank and the St. Paul BC maintained capital-to-asset ratios between 9 and 10 percent. Several districts (AgriBank, CoBank) allowed their ratios of at-risk capital to assets to decrease slightly over the year. The St. Paul BC allowed its ratio of at-risk capital to assets to fall 21 percent--the result of strong business growth coupled with moderate at-risk capital growth.

Systemwide net income before taxes and extraordinary items rose nearly 10 percent from a year earlier for the nine months ending September 30, 1995. While all districts and banks shared in this increase, it was distributed unevenly. Just two districts experienced increases of less than 10 percent--5.9 percent in the AgAmerica district and 7.4 percent in the CoBank district. All other districts and the St. Paul BC experienced increases above 17 percent. The Texas district, the AgFirst district, and the St. Paul BC all managed increases above 25 percent (figure 10).

### **Districts Continue Efforts To Increase Market Share and Loan Volume**

Since 1982, overall FCS market share has fallen from 34 to 24 percent of farm loans and volume has grown only anemically in recent years. Several FCS institutions initiated actions during 1995 to stimulate growth. Major initiatives include application for a credit union charter by a group of FCS associations, a joint venture between AgFirst, Farmer Mac and Fannie Mae to originate and securitize rural home loans, and a systemwide effort to develop a structure to provide point of sale financing to eligible borrowers. Of these initiatives, only AgFirst's joint housing loan venture is currently active. In addition, Western, FCB, is pooling loans for Farmer Mac.

FCS associations in Wisconsin have received preliminary approval for a credit union charter from the State Commissioner of Credit Unions contingent on approval for deposit-type insurance through the National Credit Union Share Insurance Fund. If final approval for the "Countryside Credit Union" is granted, association borrowers, stockholders, and employees will be eligible to receive deposit, checking, and consumer loan services that FCS associations cannot offer directly. Personnel, buildings, and equipment may be jointly employed by the credit union and the FCS associations, creating full service financial institutions with the advantages of both an FCS and a credit union charter. Such joint FCS/credit union charters could significantly alter the competitive balance among FCS lenders and commercial banks.

Nonaccrual loans continue to fall dramatically. Net incomes and total at-risk capital improve nationwide.

**Table 13—Farm Credit System district-level financial statistics**

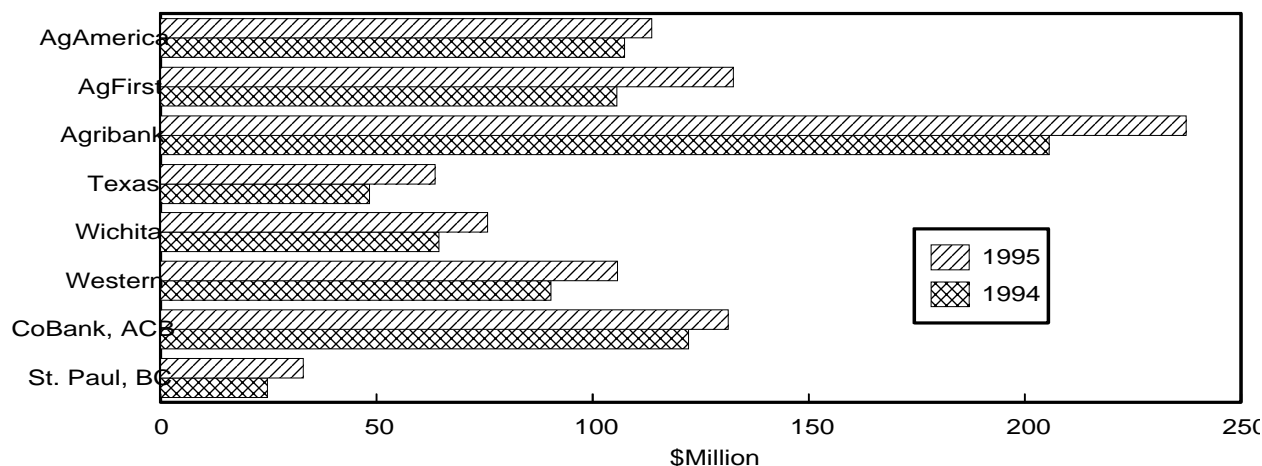
	Total loans	Nonaccrual loans	Nonaccrual loans' share	Net income before taxes and extraordinary items	Total at-risk capital 1/	At-risk capital/ assets
	\$1,000	\$1,000	Percent	\$1,000	\$1,000	Percent
-----Nine months ending September 30, 1995-----						
AgAmerica 2/	6,689,022	196,021	2.93	113,652	1,440,914	20.09
AgFirst 2/	8,793,912	167,440	1.90	132,559	1,936,211	19.23
Agribank	13,864,926	311,116	2.24	237,351	2,945,767	17.51
Texas	3,866,629	50,726	1.31	63,480	994,513	23.57
Wichita	3,597,762	50,466	1.40	75,631	955,459	22.93
Western	4,678,829	89,951	1.92	105,693	1,020,389	18.73
CoBank, ACB 2/	14,614,962	44,662	0.31	131,305	1,655,691	9.59
St. Paul, BC	2,311,411	2,181	0.09	33,021	269,673	9.68
All Districts	58,417,453	912,563	1.56	843,267	11,175,400	16.46
-----Nine months ending September 30, 1994-----						
AgAmerica 2/	6,755,205	250,722	3.71	107,324	1,314,887	18.11
AgFirst 2/	8,578,204	184,357	2.15	105,584	1,834,771	18.34
Agribank	13,470,784	406,336	3.02	205,592	2,751,334	17.63
Texas	3,778,490	61,173	1.62	48,365	926,897	20.91
Wichita	3,561,862	69,297	1.95	64,472	855,160	21.03
Western	4,830,720	154,563	3.20	90,337	999,816	18.60
CoBank, ACB 2/	13,224,824	59,273	0.45	122,236	1,497,765	9.66
St. Paul, BC	1,713,559	3,065	0.18	24,752	244,701	12.25
All Districts	55,913,648	1,188,786	2.13	768,662	10,425,331	16.23
-----Percent change, September 30, 1994 to September 30, 1995-----						
AgAmerica 2/	-0.98	-21.82	-21.04	5.90	9.58	10.94
AgFirst 2/	2.51	-9.18	-11.40	25.55	5.53	4.88
Agribank	2.93	-23.43	-25.61	15.45	7.07	-0.68
Texas	2.33	-17.08	-18.97	31.25	7.29	12.71
Wichita	1.01	-27.17	-27.90	17.31	11.73	9.05
Western	-3.14	-41.80	-39.91	17.00	2.06	0.69
CoBank, ACB 2/	10.51	-24.65	-31.82	7.42	10.54	-0.66
St. Paul, BC	34.89	-28.84	-47.25	33.41	10.21	-21.02
All Districts	4.48	-23.24	-26.53	9.71	7.19	1.45

1/ At-risk capital includes allowances for losses on acquired property and loans, surplus and unprotected borrower stock. 2/ The former Spokane and Omaha merged on April 1, 1994 to form AgAmerica. The former CoBank and Springfield Banks for Cooperatives merged with the former Springfield Farm Credit Bank on January 1, 1995 to form CoBank, Agricultural Credit Bank. The former Columbia and Baltimore FCB's merged on April 1, 1995 to form AgFirst, FCB. To facilitate comparison, the performance of the districts is combined for periods before the merger.

Source: Federal Farm Credit Banks Funding Corporation, Summary Report of Condition and Performance of the Farm Credit System, various dates.

Figure 7

### District net income for 9 months ending September 30



## **Farm Credit Administration Aggressively Pursues Farm Credit System Relief**

*New regulations are in place concerning financially related services and are proposed for capital adequacy, and eligibility and scope of financing.*

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The Farm Credit Administration (FCA) is an independent agency of the Federal Government, which was reorganized in 1985 as an arm's length regulator for the Farm Credit System. FCA's board of directors, all of whose members are now former FCS officials, has established regulatory reform as a major priority. The goals of regulatory reform are to reduce regulatory burden whenever possible and to find innovative ways to involve affected parties in the rulemaking process. Board members have indicated their intention to achieve the first of these goals by eliminating unnecessary rules, writing regulations whose benefits outweigh their costs, and focusing regulations on achieving results rather than controlling managerial decisions. Achieving the second goal involves ensuring affected parties ample opportunity, both before and during the rulemaking process, to provide input about the appropriateness of regulations, as well as the regulatory burden they impose.

### ***Three Major Regulatory Initiatives of 1995***

Major regulatory initiatives in 1995 included reforming regulations concerning financially related services, capital adequacy, and eligibility and scope of financing. Of these, final rules have been issued for the area of financially related services. Proposed rules have been published for comment in the other two areas.

Final rules for FCS financially related services call for FCA to publish a list of authorized services. FCS associations may offer listed services without further approval. Previous regulations required associations to receive FCA approval prior to offering such services. In addition, procedures are established for obtaining FCA authorization to offer services not previously reviewed and authorized. FCA intends these changes to increase FCS flexibility to serve borrower needs and to reduce the time and resources needed for an FCS institution to begin offering services such as estate planning, fee appraisal, tax planning and preparation, financial risk management, term life insurance, multiple peril crop insurance, and farm and cooperative business consulting. The new rules also allow services to be offered to non-borrowers in connection with loan applications, loan servicing, and other transactions between recipients and persons or entities eligible to borrow, allowing FCS associations to sell fee appraisals to FSA, commercial banks, or other lenders.

Proposed changes in capital adequacy rules include a requirement that unallocated surplus at FCS institutions equal at least 3.5 percent of risk-adjusted assets and that total surplus (allocated and/or unallocated) equal at least 7 percent of risk-adjusted assets. Provisions are made to prevent double counting of associations' capital investments in their affiliated banks. Institutions not in compliance with the new standards must develop and implement a capital plan, approved by FCA,

for building their surplus within a reasonable time. However, the regulations specify no mandatory phase-in period, allowing considerable flexibility in plans to achieve compliance. FCA retains authority to require more capital if the risks facing an institution warrant. Over 90 percent of FCS institutions currently meet the proposed standards.

By far, FCA's most ambitious and controversial regulatory initiative involves rewriting regulations on borrower eligibility and the scope of allowed FCS financing. These regulations have not been reviewed since 1972 except to comply with legislative changes. By removing many regulatory restrictions not explicitly found in legislative language, the effect of the proposed rules is to expand the universe of eligible borrowers and types of loans some borrowers may obtain from FCS institutions. This regulatory reform is of great concern to FCS competitors, especially commercial banks. Major provisions of this initiative include the elimination of some restrictions on borrower eligibility, removal of some financing limitations, and clarification and expansion of lending authority for nonfarm rural housing, processing and marketing operations, and farm-related businesses.

*Change in restrictions on eligibility.* The proposed changes reduce or eliminate restrictions on financing for part-time farmers, certain legal entities, and non-resident foreign nationals. The regulations would clarify that for purposes of eligibility, full-time farmers, part-time farmers, individuals, legal entities, and foreign nationals would all be considered "bona fide farmers" if they generate income from agricultural assets or own land that could be used for agricultural production. Non-resident foreign nationals authorized by other Federal and State laws to engage in agricultural or aquatic production or to own U.S. land would also be fully eligible to borrow. Existing regulations bar non-resident foreign nationals from borrowing from FCS institutions and limit eligibility to legal entities that have at least 50 percent of their assets, income, or ownership related to agriculture.

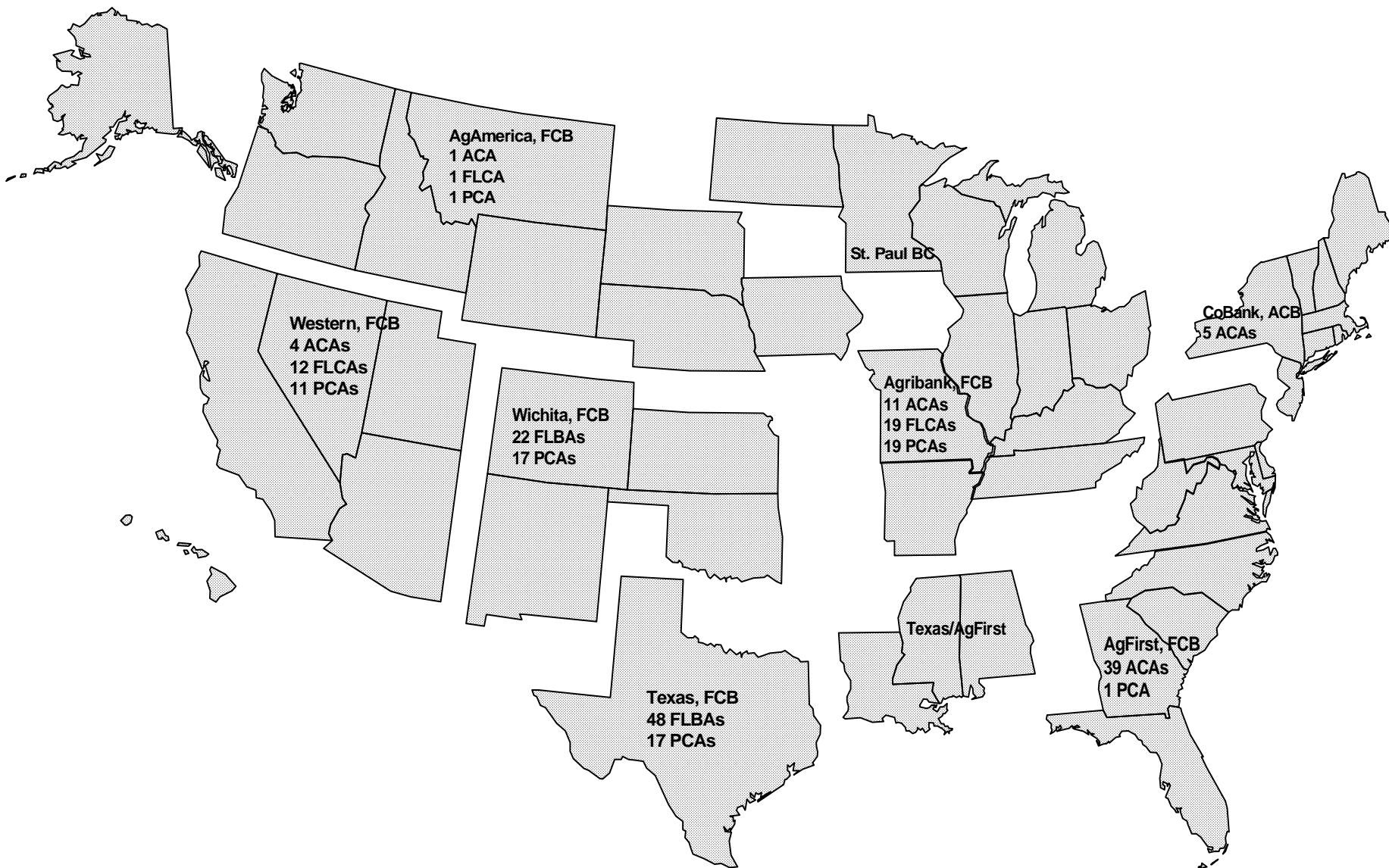
*Changes on financing limitations.* Current regulations allow financing of nonagricultural credit needs to full-time farmers with outstanding agricultural loans. Proposed regulations would allow farmer-producers, including part-time farmers, to obtain financing for housing and other domestic needs without restriction and for nonfarm business needs up to the value of their agricultural assets. Publicly traded corporations and other large producers not owned by eligible borrowers could obtain financing only for their agricultural enterprises.

*Other changes.* Proposed regulations would similarly relax restriction on lending authority for nonfarm rural housing, processing and marketing operations, and farm-related businesses.



Figure 8

# Farm Credit System Banks and Associations, January 1, 1996\*



\*Associations affiliated with Texas, FCB, include 3 PCAs in New Mexico, 2 FLBAs in Alabama, 2 FLBAs in Mississippi, and 2 FLBAs and 1 PCA in Louisiana. Associations affiliated with Western, FCB, include 1 PCA in Idaho. Associations affiliated with AgFirst, FCB, include 1 ACA in Ohio, 2 ACAs in Kentucky, 1 ACA in Tennessee, and 1 PCA serving Alabama, Mississippi, and most of Louisiana.

Source: "Corporate Restructuring Report", Farm Credit Administration, January 1, 1996.

## **Farm Service Agency Credit Quality Improves**

*Legislative proposals could make sweeping program changes.*

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Farm Service Agency guaranteed lending volume surpassed \$1.9 billion in fiscal 1995 and accounted for a record 77 percent of the agency's farm lending activity. Direct lending was reduced to \$564 million, the lowest in at least 30 years (table 14). Adjusted for inflation, direct (insured) lending was the lowest since the old Farmers Home Administration was created in 1946. The drop in direct lending was aided by a 50-percent decline in Emergency Disaster (EM) lending.

Funding levels for fiscal 1996 are very similar to those of 1995 and should be sufficient to meet demand for most programs (table 15). Going into fiscal 1995 there was a backlog of applications that increased loan demand in 1995. With the exception of the direct Farm Ownership program, there was not an application backlog going into fiscal 1996. Authority for the Interest Rate Assistance program lapsed on October 1, 1995, and was not restored until February 1996.

FSA's direct lending program share of total outstanding agricultural debt declined to an estimated 7 percent at the end of 1995--the same share it had in 1978. The decline in outstanding debt was largely due to large loan writeoffs and reduced new lending activity. Outstanding volume on direct loans fell by \$1 billion, while outstanding guaranteed volume rose by \$500 million at the end of the fiscal year (table 16).

### ***Delinquencies and Losses Are Down***

At fiscal 1995 yearend, past due principal and interest payments on direct loans totaled \$3.2 billion, down 10 percent from a year earlier (table 17). Although delinquent volume declined, the delinquency rate remained unchanged from last year. Debt restructuring and loan collections accounted for much of the decline. The Economic Emergency (EE) and EM programs accounted for over two-thirds of the delinquencies. The EE program has not been funded for over a decade.

Under extensive loan servicing rules, FSA continues to restructure delinquent debt on direct loan accounts. FSA processed writedowns of \$48 million, writeoffs of \$37 million, and debt settlements of \$840 million during the year. All three of these totals were down from 1994 levels. Writedowns are subject to recapture agreements with the borrower, while writeoffs are not. Debt settlement agreements are made with farmers who cease borrowing from FSA.

Delinquent payments in the guaranteed programs rose after 2 years of decline, but on a percentage basis remained unchanged. The quality of the guaranteed loan portfolio remains strong a decade after policy changes began to emphasize these programs over direct lending programs. It was thought that the performance of guaranteed loans would deteriorate as the loans became older, but that has not materialized. FSA losses on guaranteed farm loans fell again

in fiscal 1995 to just \$33 million, or only about a half of 1 percent of outstanding guaranteed principal.

Fiscal 1995 net loan writeoffs (principal and delinquent accrued interest payments) on direct loans also decreased to \$1 billion from \$1.3 billion a year earlier. Much of the losses continued to come from the EE and EM programs. With more than \$2 billion in past due payments remaining in these two programs, direct loan writeoffs will remain high for some time.

### ***Sweeping Legislation Is Possible***

Pending farm bill legislation and U.S. budget debates will likely affect FSA farm credit programs in the years ahead. In general, farm bill proposals would further direct the mission of the agency toward serving as a temporary source of supervised credit for farmers, with even greater emphasis on assisting beginning and family-sized farm operations.

The sweeping proposals would try to slash high program costs and loan losses, which have now reached \$18 billion over the last 11 years. This would be accomplished by ending or modifying current high risk farm lending policies and by continuing to emphasize lower cost guaranteed lending over higher cost direct lending. Guaranteed programs, particularly those targeted for beginning farmers, would be modified to make them more flexible and easier for lenders to use. This might include increasing the guarantee percentage to 95 percent for beginning farmers.

A myriad of costly direct loan servicing options and borrower rights provisions available to delinquent accounts would be dismantled by the proposals. High loan losses have been propelled by generous loan servicing rights granted in 1987. The proposals would ensure swifter graduation to commercial credit by placing stricter time limits on borrower eligibility and limits on borrowing amounts and purposes. Among many other features, the authority for little used or unfunded programs would be eliminated, loan collection procedures would be improved, and property received from loan collections would no longer be allowed to accumulate in inventory.

The reorganization of USDA in 1994 is still being implemented and this is still affecting FSA credit program delivery. Currently, the credit programs are being administered by approximately 740 specialized credit teams located in that many offices. All of the 3,300 FSA offices are to undergo cross training to handle routine loan administration work. The long range plan would allow every office the ability to make at least some credit decisions as soon as training is complete.

**Table 14—Farm Service Agency farmer program obligations, September 30, 1986 to September 30, 1995**

Year 2/	Obligations 1/			Share of total	Outstanding principal of farmer programs 3/
	Total	Direct (Insured)	Guaranteed		
	----- <i>Million dollars</i> -----			<i>Pct.</i>	<i>Mil. dol.</i>
1986	4,367.5	2,807.9	1,569.1	35.9	29,240.4
1987	3,080.5	1,515.0	1,587.4	51.5	28,147.6
1988	2,320.7	1,065.8	1,271.4	54.8	28,242.6
1989	2,229.6	1,030.1	1,199.5	53.8	26,525.6
1990	2,193.2	921.3	1,271.9	58.0	23,684.0
1991	2,124.1	633.7	1,490.4	69.2	21,992.1
1992	2,306.4	714.5 4/	1,591.9	69.0	20,460.6
1993	2,135.2	672.7 4/	1,432.5 5/	67.1	18,815.5
1994	2,725.6	881.9 4/	1,843.7 5/	67.6	18,040.1
1995	2,501.9	563.6 4/	1,938.3 5/	77.5	17,451.1

1/ Obligations are the dollar amounts of funds loaned or guaranteed, including the dollar amount of interest rate assistance provided on guaranteed loans. 2/ years. 3/ Total outstanding principal balance of guaranteed FSA loans and direct or insured FSA loans at yearend. 4/ Does not include credit sales of acquired assets. 5/ Does not include guaranteed agricultural resource conservation demo loans.

Sources: Farm Service Agency, 616 Report, 4067C Report, and 205 Report, various issues.

**Table 15—Farm Service Agency major farmer program apportionment and obligations, fiscal 1995, and apportionment, fiscal 1996**

Program	Fiscal 1995 apportionment 1/	Fiscal 1995 obligations 2/	Fiscal 1996 apportionment 1/
	<i>Thousand dollars</i>		
Farm ownership (FO)			
Direct	49,233	56,923	73,708
Guaranteed	562,534	559,948	535,267
Operating loans (OL)			
Direct	447,691	437,854	579,237
Guaranteed	2,127,135	1,378,323	1,850,974
Emergency disaster (EM)	106,548	68,823	109,339

1/ Budgetary appropriations setting limits on the volume of new loans that can be issued during the fiscal year. Some funding is transferable between programs and also adjusted to supportable levels. 2/ Actual amount of lending authority committed to new loans or loan guarantees.

Source: Farm Service Agency.

**Table 16—Farm Service Agency guaranteed farmer loan program delinquencies, September 30, 1986 to September 30, 1995**

Year 1/	Number of active cases			Principal outstanding		
	Total 3/	Delinquent		Total	Delinquent 2/	
		Total	Proportion		Amount	Share of total
	-----Number-----		Percent	-----Million dollars-----		Percent
1986	NA	NA	NA	1,664.5	31.4	1.9
1987	18,887	1,052	5.6	2,384.0	42.6	1.8
1988	27,519	1,298	4.4	3,177.6	54.1	1.7
1989	30,016	1,580	5.3	3,243.7	60.6	1.9
1990	36,955	1,681	4.6	4,139.8	58.5	1.4
1991	40,169	1,904	4.7	4,526.6	59.3	1.3
1992	42,189	2,376	5.6	4,923.9	102.8	2.1
1993	42,475	2,077	4.9	5,044.8	98.5	2.0
1994	44,129	1,659	3.8	5,417.5	82.3	1.5
1995	46,838	1,821	3.9	5,933.1	91.3	1.5
1995 by major program area						
Farm ownership	17,941	555	3.1	2,592.6	26.3	1.0
Operating loans	28,696	1,128	3.9	3,320.9	62.5	1.9
Economic emergency 4/	194	26	13.4	18.9	2.1	11.1

1/ September 30 of year shown. 2/ Amount delinquent includes past payments of principal and accrued interest. 3/ Duplicated cases because some borrowers have loans under several different programs. 4/ The economic emergency program is no longer being funded. NA = Not Available.

Source: Farm Service Agency, 4067 Report, various issues.

**Table 17—Farm Service Agency direct farmer loan program delinquencies, September 30, 1986 to September 30, 1995**

Year 1/	Number of active cases 2/			Principal outstanding		
	Total	Delinquent 3/		Total	Delinquent 4/	
		Total	Proportion		Amount	Share of total
	-----Number-----		Percent	-----Million dollars-----		Percent
1986	421,651	134,565	31.9	27,575.9	6,276.5	22.8
1987	388,833	127,577	32.8	25,763.7	6,592.0	25.6
1988	376,388	137,958	36.7	25,065.0	8,321.7	33.2
1989	346,442	114,737	33.1	23,281.9	8,005.6	34.4
1990	299,069	80,341	26.9	19,544.2	6,138.8	31.4
1991	280,528	79,204	28.2	17,465.5	5,507.5	31.5
1992	251,892	73,657	29.2	15,536.7	4,804.8	30.9
1993	224,739	56,099	25.0	13,775.5	4,116.2	29.9
1994	208,130	47,723	22.9	12,622.6	3,569.9	28.3
1995	193,963	52,627	27.1	11,518.0	3,198.8	27.8
1995 by major programs						
Farm ownership	71,051	13,373	18.8	4,547.9	294.0	6.5
Operating loans	55,893	19,205	34.4	2,691.1	632.1	23.5
Emergency-disaster	42,093	13,075	31.1	3,046.3	1,830.3	60.0
Economic emergency 5/	14,674	5,277	36.0	1,082.9	418.6	38.6
Soil and water 5/	6,512	1,394	21.4	118.5	21.0	17.7

1/ September 30 of year shown to account for the annual cyclical trend in delinquencies. 2/ Duplicated cases because some borrowers have loans under several different programs. Prior to 1988 active cases excluded those borrowers who are in foreclosure, bankruptcy, or liquidation status. Active cases do not include loans made to associations. 3/ Prior to 1988 a case was considered delinquent when a payment was more than \$10 and 15 days past due. Beginning in 1988, a case is considered delinquent if a payment is more than 30 days past due. 4/ Past due principal and interest payments. 5/ Program is no longer being funded.

Source: Farm Service Agency, 616 report, various issues.

## **Life Insurance Company Farm Loan Portfolios Continue To Improve**

*Loan delinquencies and foreclosures are at their lowest since the early 1980s. Loan volume forecast to grow slightly in 1996.*

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Historically, agricultural real estate mortgages have been an important investment for life insurance companies and a key source of farm real estate loan funds. Just over 15,000 agricultural mortgage loans were held by 19 life insurance companies on June 30, 1995. During 1995, the quality of agricultural mortgage portfolios of life insurance companies generally improved.

### ***Delinquencies Continue Decline***

Delinquency rates on the dollar volume of loans outstanding have been lower for agricultural mortgages than nonagricultural loans since 1991 because of problems with the industry's urban commercial real estate portfolio. The percent of agricultural mortgage debt that is delinquent exceeded the nonagricultural rate from June 1978 until December 1991. The agricultural delinquent share rose to a record 19.85 percent in June 1986 but declined to 2.85 percent by June 1995 when 3.53 percent of the nonagricultural portfolio was delinquent (table 18). It now is the lowest since 1980. Some \$249.9 million of life insurance company agricultural mortgage debt was delinquent on June 30, 1995.

### ***Foreclosures Continue To Move Lower***

Agricultural mortgage foreclosure rates by dollar amount of loans outstanding exceeded nonagricultural rates from June 1978 until December 1991 (table 19). On June 30, 1986, a record 8.23 percent of the amount outstanding was in the process of foreclosure, but by June 30, 1995, it had declined to 1.02 percent, the lowest since 1980. A total of \$89.8 million in life insurance company farm mortgage loans was in the process of foreclosure on June 30, 1995, down from \$203.6 million 5 years earlier. Agricultural mortgage loans in the process of foreclosure totaled 95 on June 30, 1995, down from 2,030 on December 31, 1986.

The number and dollar amount of agricultural and nonagricultural loans actually foreclosed during 1982-95 are shown in table 20. They are now the lowest since 1981. Agricultural mortgage foreclosures rose each year of the 1980's until 1986 when they peaked at \$827.5 million, but they were only \$41.7 million in 1994. During 1982-85, the dollar amount of agricultural mortgage foreclosures even exceeded that for nonagricultural mortgages.

### ***Important Trends Affect Lending***

The life insurance industry's relationship with agriculture has changed rapidly in recent years. In spite of the changes, life insurance companies have been resilient lenders to the farm sector, occupying an important market segment. They held 11.5 percent of the farm mortgage debt (including operator households) in 1995, compared with 12 percent when the

USDA data series began in 1910, and a high of 25.1 percent in 1955-56.

The number of life insurance companies making new farm mortgage loans declined from 12 in 1980 to 7 in late 1995, with most departures occurring in 1986. Twenty companies now hold farm mortgages (table 21). The 7 companies currently active in farm lending account for about 80 percent of the industry's farm mortgages and generally have both high total assets and large farm mortgage portfolios. They have virtually pulled out of the small- to medium-sized farm mortgage market in favor of more agribusiness, timber, and specialty enterprises. Companies are emphasizing larger (\$500,000 or more) agricultural loans.

Life insurance company farm mortgage loans are spread throughout the Nation. But the concentration of holdings has been shifting away from the Corn Belt to the Southeast and Pacific Coast farm production regions. This trend accelerated during the 1980s as companies divested troubled midwestern loans, sought larger loans, and invested more in mortgages backed by timber or agribusiness assets. The share of the industry's outstanding mortgage volume in the Corn Belt declined from 23.5 percent in 1980 to 13.5 percent in 1994, while the Pacific region's share increased to 36.8 percent from 19.3 percent. At 1994 yearend (based on the most recent available State-level data), the Pacific region, Florida, and Texas together accounted for 54.8 percent of total outstanding dollar volume of life insurance farm mortgages.

Life insurance industry participation has been a key to Farmer Mac's limited success accounting for much of the \$827.6 million of loan principal pooled under Farmer Mac I. Six of the seven pools guaranteed through 1995 involve a life insurance company as either an originator, pooler, or both. Also, five of the original nine poolers certified by Farmer Mac were affiliated with life insurance companies. But the strong life insurance company participation in Farmer Mac is somewhat misleading. Life insurance companies' limited activity in Farmer Mac occurred at a time when the industry was downsizing traditional farm lending in favor of agribusiness and timber investments. Much of the loan volume pooled by life insurance companies came from existing loans that were packaged and securitized. Life insurance company experimentation with Farmer Mac may be over without a change in market conditions.

The life insurance industry's relationship with agriculture has grown more complicated in recent years. Seven major companies continue to offer farm mortgage loans and the total of such loans held by all companies is \$9.2 billion. The industry also now holds \$2.6 billion in direct farmland investments, up almost tenfold since 1979. The creation of the

Farmer Mac secondary market added to the range of possible activities vis-a-vis agriculture. The nominal average farm loan increased three times in size during 1980-95 as the focus of activity shifted from the Corn Belt to the Southeast and Pacific regions. The industry increasingly specializes in larger loans with short maturities or balloon payments while employing more stringent loan standards. Smaller loans to family farms are made much less frequently in favor of larger loans and more timber and agribusiness loans.

### ***Outlook Is Generally Favorable***

The life insurance industry is taking a renewed interest in farm real estate financing. There will be opportunities in 1996 for life insurance companies to make profitable farm mortgage loans, but the competition for the better-quality loans will continue to be keen. Active companies continue to have an ample supply of loanable funds and are aggressively competing on rate, terms, and loan-to-value ratio. Except in areas with weather problems, continued financial progress is expected.

Unlike the late 1970s and early 1980s when mortgage lenders aggressively competed for quality borrowers by narrowing interest profit spreads and loaning more dollars per acre, most mortgage lenders today are conservative with loan-to-value ratios. The real competition today is in the level of risk-adjusted interest rate spreads. There is some feeling among the life insurance lenders that competition is not only strong to overly aggressive on high-quality proposals, and some lenders are now underpricing credits compared with the risk.

The seven companies active in the farm loan market continue to report that available funds exceed qualified agricultural applications. Total life insurance company farm loans outstanding are projected to increase slightly in 1996, the fourth consecutive year of growth. The life insurance firms currently active in the farm mortgage loan market will continue to be big companies with large farm loan portfolios.

Most of the industry's new lending will consist of relatively large loans in selected States rather than being distributed evenly nationwide. Companies report that credit demand is more robust in the Southeast and West. Activity on Farmer Mac loans that can be sold out of the company's portfolio or from new loans is expected to be minimal.

Although insurance lenders recognize that current changes in U.S. farm policies can alter the location and incidence of financial stress, they are quite optimistic. There is a belief that a gradual reduction in the reliance on farm programs will mitigate the effects of reduced government outlays to agriculture. The feeling is that the life insurance industry is in a strong position to weather these potential changes due to the wide diversity of crop types, States, and loan sizes. Much of the insurance industry's farm loan portfolio is secured by land on which non-government supported commodities are produced, which moderates any effects of Federal support cuts.

The farm borrower targeted by the insurance industry is the larger, diversified unit that is less likely to be negatively affected by a reduction in farm program support payments. The insurance industry expects some farm sector ripple effects from the economic impact of program cuts, but feels the changes will be spread over several years allowing markets to adjust more slowly. Some insurance industry people feel that a lowering of Federal farm commodity deficiency payments may create an increased demand for short term loans for crop production financing. They feel this increased demand could necessitate that some other lenders focus less on their real estate loan portfolios leaving more of the market for the insurance lenders. Overall, there is a belief that the farmland market to a considerable degree already has factored in the expected lower levels of future government support and that farm mortgage loan demand may even improve after the passage of the farm legislative package because of more certainty about future policy.

**Table 18—Life insurance company mortgage loan delinquencies, 1988-95 1/**

End of month	Rates by number of loans		Rates by amount	
	Nonagricultural mortgages	Agricultural mortgages	Nonagricultural mortgages	Agricultural mortgages
<i>Percent</i>				
1988 June	1.53	6.75	2.77	13.27
Dec.	1.74	4.44	2.44	8.87
1989 June	1.55	4.68	2.75	8.65
Dec.	1.68	2.68	2.37	4.74
1990 June	1.87	3.41	2.94	5.26
Dec.	2.10	2.40	3.60	4.22
1991 June	2.30	3.55	5.25	6.35
Dec.	2.66	2.34	5.79	3.84
1992 June	2.87	4.07	7.35	5.48
Dec.	3.05	2.64	6.50	3.33
1993 June	2.78	3.47	6.23	4.06
Dec.	2.84	1.99	4.48	2.21
1994 June	2.94	2.51	5.00	3.77
Dec.	2.81	1.27	3.34	2.60
1995 June	2.67	1.67	3.53	2.85

1/ Delinquent loans (including loans in the process of foreclosure). A delinquent loan is a nonfarm mortgage with interest payments in arrears at least 2 months if other than a monthly pay) or a farm loan with interest in arrears more than 90 days.

**Table 19—Life insurance company mortgage loans in the process of foreclosure, 1988-95 1/**

End of month	Rates by number of loans		Rates by amount	
	Nonagricultural mortgages	Agricultural mortgages	Nonagricultural mortgages	Agricultural mortgages
<i>Percent</i>				
1988 June	.46	3.36	1.16	6.33
Dec.	.45	2.60	1.22	4.83
1989 June	.43	2.35	1.38	4.67
Dec.	.43	1.30	1.29	2.28
1990 June	.46	1.31	1.56	2.23
Dec.	.51	1.13	1.71	1.91
1991 June	.58	1.26	2.39	2.45
Dec.	.68	1.29	2.78	2.24
1992 June	.77	1.74	3.40	3.11
Dec.	.76	1.57	3.08	2.32
1993 June	.84	1.52	2.89	1.93
Dec.	.80	1.04	2.14	1.30
1994 June	.82	.97	2.46	1.04
Dec.	.82	.68	1.77	1.11
1995 June	.80	.62	2.05	1.02

1/ Reporting companies account for approximately 85 percent of the mortgages held by U.S. life insurance companies depending on the date of the survey. Foreclosure include those on which foreclosure action has been authorized, including any involved in a subsequent filing of bankruptcy. Beginning in 1988, the foreclosure category includes loans in redemption period.

**Table 20—Life insurance company mortgage loans foreclosed, 1982-95 1/**

Year	Nonagricultural mortgages		Agricultural mortgages	
	<i>Number</i>	<i>Thou. dollars</i>	<i>Number</i>	<i>Thou. dollars</i>
1982	760	131,392	167	170,310
1983	868	114,993	306	347,002
1984	1,024	242,428	475	289,251
1985	1,033	328,558	1,000	530,235
1986	1,541	1,143,082	1,654	827,472
1987	2,048	1,580,027	1,515	691,914
1988	1,196	2,530,105	727	364,414
1989	1,098	2,178,949	356	204,361
1990	1,018	3,042,171	122	85,281
1991	1,284	4,942,349	125	94,875
1992	1,365	6,665,288	88	148,006
1993	1,159	6,013,084	79	96,318
1994	844	4,463,787	31	41,745
1995 2/	346	1,735,067	12	59,745

1/ Loans foreclosed include those for which title to the property or entitling certificate was acquired during the period shown, either through foreclosure or voluntary conveyance in lieu of foreclosure. Dollar amounts include principal outstanding at the time of the foreclosure, amounts capitalized for interest, foreclosure costs, and advances made to protect the collateral. 2/ January 1 through June 30.

Source: American Council of Life Insurance, Investment Bulletin, various issues.

**Table 21—Farm real estate loans held by life insurance companies, 1980, 1992, and 1994, and farm loan market status, 1996**

Company	Share of total loans			Farm loan market status, February 1996 4/
	January 1 1980 1/	January 1 1992 2/	January 1 1994 3/	
	-----Percent-----			Status
1. Metropolitan Life*	12.148	18.684	26.067	Active
2. Equitable (U.S.)*	15.777	19.114	19.259	Active
3. Prudential*	17.941	16.338	18.165	Active
4. Travelers*	13.649	13.972	6.995	Active
5. MONY*	3.090	3.872	5.811	Active
6. MBL Life Assurance 5/*	2.682	4.155	3.399	Active
7. Providian Capital Management 6/	0	0	0	Active
8. John Hancock 7/*	15.026	18.089	17.053	Inactive
9. CIGNA*	5.874	2.285	1.226	Inactive
10. Northwestern*	3.495	0.960	0.741	Inactive
11. Connecticut Mutual*	4.093	1.313	.608	Inactive
12. Aetna 8/*	3.251	.869	.486	Inactive
13. Kansas City	0.997	.140	.090	Inactive
14. Northwestern National	.384	.113	.059	Inactive
15. Phoenix Home Life 9/*	1.272	.074	.023	Inactive
16. American General 10/	.069	.011	.007	Inactive
17. Southwestern	.027	.007	.005	Inactive
18. Equitable (Iowa)	.140	.002	.002	Inactive
19. Business Men's	.065	.002	.002	Inactive
20. Midland National	.004	0	.001	Inactive
21. Principal Mutual 11/	.015	0	0	Inactive
22. Great Southern	-- 12/	0	0	Inactive
Total	100.0	100.0	100.0	NA

NA= Not applicable. \* = Asterisk following company name indicates an active participant in the farm mortgage loan market in 1980. 1/ Data obtained from p annual statements of the life insurance companies. The reported total was \$11,895,118,000 or 97.8 percent of the \$12,165,000,000 held on December 31, 1980. 2/ Based on data reported by the American Council of Life Insurance in their annual Life Insurance Fact Book. 3/ Based on data reported by the individual companies. The reported total was \$9,378,924,582 or 99.0 percent of the \$9,469,174,000 held on December 31, 1994. 4/ "Active" = Participates as an active farm mortgage lender; "Inactive" = Not presently in the market for farm mortgage loans. 5/ MBL Life Assurance acquired the assets of Mutual Benefit Life Insurance in 1994. 6/ Providian Capital Management Real Estate Services is a new participant in agricultural mortgage lending initiating operations in July 1995. Its goal is to build an organization capable of generating \$200 million per year in annual loan volume. 7/John Hancock left the farm mortgage lending business effective February 1, 1995, but continues to provide agribusiness loans, timber loans, and to invest in agricultural equities including farm real estate. 8/ Aetna Life Insurance after being out of the farm mortgage market since 1948 reentered the market in 1977 but stopped making new farm mortgage loans in 1984. 9/ Phoenix Mutual and Home Life Insurance Company merged in 1992 to form Phoenix Home Life. 10/ American Amicable merged with American General in 1987. 11/ Formerly Bankers Life Insurance Company. 12/ New York Life Insurance Company.



## Farmer Mac Gets Another Chance

*New legislation makes it more competitive, but its future still remains uncertain.*

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The volume of mortgages sold through Farmer Mac I, the secondary mortgage market for high quality agricultural real estate and rural home mortgages, was again small in 1995. Only one new loan pool totaling \$71 million was packaged by the Western Farm Credit Bank (WFCB) and guaranteed by Farmer Mac during the year. Farmer Mac loan pools have totaled only \$827 million (includes the reissuance of a \$34 million pool) in 7 years of operation (appendix table 9). Much of the volume came from packaging of existing loans, primarily those of life insurance companies.

As of January 1, 1996, only two Farmer Mac I poolers were active. AgFirst, which is a FCB covering the Mid-Atlantic and Southeast regions, is using Farmer Mac to become a nationwide pooler of rural housing loans for the Federal National Mortgage Association (Fannie Mae). The WFCB is now operating a nationwide pooling program for agricultural mortgages under the name National AgriMortgage Funding (Agfunding). Of the nine poolers originally certified to participate, six have been decertified by Farmer Mac for lack of participation.

The low volume of loans sold through the market to date has left Farmer Mac unprofitable. Through the third quarter of 1995 cumulative losses had whittled Farmer Mac's initial capital in half to \$11.6 million. Facing weak business prospects, a shrinking capital base, and pending regulatory capital standards it could not meet, Farmer Mac sought legislation in 1995 to revive the prospects for Farmer Mac I, its primary business.

### **The New Legislation**

Farmer Mac's new legislation came under the Farm Credit System Reform Act of 1996 (P.L. 104-105) and was signed into law on February 10, 1996. The legislation modifies the corporation's operating authority in an attempt to lower costs, grants regulatory relief from higher pending capital standards, and provides guidelines for recapitalization and for an orderly liquidation of the corporation if capital becomes inadequate. The new charter for Farmer Mac is now patterned closely after Fannie Mae's charter.

Farmer Mac's new charter expands its authority by allowing it to become a portfolio lender. Farmer Mac can now purchase loans directly from lenders and either hold purchased loans in portfolio or sell them off as mortgage-backed securities. This allows Farmer Mac to control the whole securitization process. It also codifies Farmer Mac's interpretation of statute language on the value of rural homes eligible for a Farmer Mac guarantee. In determining eligibility, the value of land underlying a rural home will not be counted toward the \$100,000 home value limit, adjusted for inflation.

To lower securitization costs, the 10-percent subordinate participation interest (SPI) or cash reserve requirement, the primary firewall between capital and loan losses, and loan diversification standards were eliminated. With the reserve requirement, the lender or pooler or another party other than Farmer Mac took the first 10 percent of a loss in the case of default. Geographical and commodity diversity standards had been in place to ensure that a regional or commodity specific downcycle would not concentrate losses in one loan pool.

The legislation also gives the corporation full agency status in credit markets by requiring the Federal Reserve to act as a depository and fiscal agent for Farmer Mac securities and by allowing Farmer Mac securities to be traded through its book entry-system. These authorities were optional to the Federal Reserve in the original legislation.

The legislation gives Farmer Mac a 3-year extension to its original 5-year transition to permanent capital standards due to end at the close of 1996. New capital standards were imposed on all government sponsored enterprises (GSEs) to enhance safety and soundness in the early-1990's. After the transition period, Farmer Mac's minimum capital requirements will be 2.75 percent (up from 2.50 percent) for on-balance sheet assets, such as loans held in portfolio, and 0.75 percent (up from 0.45 percent) for off-balance sheet assets, such as loan pools guaranteed, but not owned by Farmer Mac. During the 3-year transition period, the FCA is prohibited from issuing potentially more stringent risk-based capital standards and must begin publishing proposed standards in public rule form. FCA was suppose to issue these standards by 1994, but failed to do so.

Farmer Mac will have up to 2 years from enactment to bring its core capital up to \$25 million. If it fails to do so, it will no longer be able to purchase loans or guarantee or issue mortgage-backed securities. Total on- and off-balance sheet assets are limited to \$3 billion if the \$25 million threshold is not reached within the 2 year period. The FCA is given explicit authority to place the corporation into conservatorship, receivership, and liquidation if Farmer Mac fails to meet its critical capital levels.

### **How Much Will the Legislation Help?**

How successful the legislation is depends on how much of Farmer Mac's difficulties are the result of its original uncompetitive market structure (statutory charter) and how much are the result of unfavorable credit market conditions. While the legislation makes Farmer Mac more competitive, it does not affect the business environment in which it operates. This environment has featured high bank lending capacity and an unfavorable interest rate environment that minimized the demand for Farmer Mac's fixed rate loan product. Without a sustained change in the business environment, the possibility

remains that Farmer Mac will fail to achieve financial health. Farmer Mac has little or no control over primary credit market conditions.

Demand for Farmer Mac's principal product--fixed rate financing--has been weak because the interest rate yield curve has often favored loans priced with short term interest rates relative to long term interest rates. Even more importantly, loan interest rates have been declining since Farmer Mac's creation. Interest rates have been in a declining pattern since the early 1980s. This means that borrowers with adjustable rate mortgages have been rewarded with lower rates without having to incur refinancing costs as occurs with fixed rate mortgages.

Until borrowers become convinced that interest rates will begin to rise for an extended period, a major shift in farmer demand from variable rate to fixed rate financing may not occur. Although Farmer Mac could offer products with short interest rate reset periods, their pricing advantage tends to fall as maturities shorten. Deposit-taking institutions and the FCS have no competitive disadvantage in offering variable rate loans. Recently, fixed rate loans have benefited from a relatively flat yield curve and that could benefit Farmer Mac's business, if the conditions hold.

Farmers have been paying down debt and hence have been low users of credit since Farmer Mac's startup. Operating in a loan paydown cycle may have hurt Farmer Mac volume because loan demand is not strong and lenders have excess lending capacity. Total outstanding farm business real estate debt declined through 1992. Outstanding farm real estate debt has been rising slowly since 1992 and if the trend continues, Farmer Mac's volume could benefit.

### ***Bank Lending Capacity Has Been Ample***

Farmer Mac has operated when agricultural banks, a primary source of loans, have had ample lending capacity. The loan-to-deposit ratio for agricultural banks was low during Farmer Mac's startup--stuck around 0.55 until 1993. With relatively weak loan demand, bankers had little incentive to sell off existing performing and well collateralized farm loans.

Evidence suggests that loanable funds at banks might be tightening, which could brighten Farmer Mac's prospects. The loan-to-deposit ratio for agricultural banks reached 0.665 in the third quarter of 1995--the highest quarterly ratio in at least 35 years. Despite this rise, there has been little clamor to sell loans as banks generally report sufficient lending capacity and a competitive lending market. Many banks are reporting stagnant to declining deposit bases in rural areas and this could increase the demand for Farmer Mac services. However, banks today have other tools to fund loan demand, such as the Federal Home Loan Banks (FHLBs), which were not available when Farmer Mac was first created.

### ***Charter Problems Fixed***

The two major structural features most frequently mentioned as obstacles to Farmer Mac's success were the requirements that Farmer Mac operate its program through poolers and that a 10-percent SPI or reserve be maintained for each loan pool. The SPI is difficult to handle, because most of the default risk is in the first 10 percent of the loan. Recognizing these risks, commercial bank regulators have required that banks hold capital on the entire value of a loan with this recourse feature. This reduces the incentive to sell unless another party assumes liability for the 10 percent reserve.

Farmer Mac contends that the SPI elevated its mortgage-backed security costs to uncompetitive levels. Farmer Mac says the SPI might have added as much as 87 basis points to its costs. The exact amount is uncertain because of the variety of the types and infrequent number of loan pools it actually was involved with. If Farmer Mac can lower market loan rates by even half that amount it should be a more competitive force in rural credit markets.

The inability to pool loans and the lack of government agency status in securities markets also might have impeded Farmer Mac because it had to rely on another party to be the market maker. There may be some small cost advantages in controlling the whole pooling, warehousing, servicing, and securities issuing process necessary for mortgage-backed securities.

## **Farmer Mac Still Faces Hurdles**

*The new legislation raises some concerns about safety and soundness.*

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Farmer Mac's new charter will not help it overcome the fact that only a fraction of the total \$79 billion farm mortgage market qualifies for sale through Farmer Mac. This could lead to problems in obtaining sufficient volume to be profitable, especially during the next few years. Nearly \$18 billion of the total is held by noninstitutional lenders, primarily individuals, and another \$5 billion is held by USDA. This leaves Farmer Mac only a \$55-billion market to draw farm mortgage loans from.

Loan underwriting standards will disqualify even more of the total market. A USDA study found that when Farmer Mac underwriting standards were applied to 1989 data, only 18 percent of all farm debt would qualify for the market. An update of the study with 1993 data indicated the percentage is near 22 percent. The implication of these results is that Farmer Mac is a niche lender, primarily serving the top farm borrowers. The market for these creditworthy borrowers is very competitive.

Even if the top half of commercially held farm real estate debt met Farmer Mac underwriting standards, Farmer Mac has only about \$3.5 to \$5.5 billion in annual farm mortgage origination volume to draw from. The share of this volume Farmer Mac captures depends on a number of factors, particularly how competitive its products are relative to other loan sources. Life insurance companies especially target these higher quality loans, and their funding and origination costs are quite competitive.

The FCS, which obtains its funding at similar rates to Farmer Mac, could also prove to be very competitive in delivering loan products through its network of retail and wholesale outlets. The FCS tends to focus its lending on these top borrowers as well. Moreover, the FCS already offers fixed rate financing, when customers demand it. The FCS also enjoys an extremely high capital base, which would allow the FCS to aggressively price loans with very small margins because it does not need to build capital. Farmer Mac could relax its loan standards, but in doing so runs the risk of higher default rates and servicing costs.

### ***Rural Housing and Farmer Mac II***

Farmer Mac has not guaranteed a rural housing pool, although AgFirst is using Farmer Mac's guarantee to operate as a national pooler for Fannie Mae. Farmer Mac may have difficulty establishing a large presence in rural housing markets because the private sector housing market is already served by four other government-sponsored enterprises (GSE's): the FCS, FHLBs, Fannie Mae, and the Federal Home Loan Mortgage Corporation (Freddie Mac). In addition, Federal housing programs available to rural areas include those of the Veterans Administration, the Federal Housing Administration, and the Rural Housing and Community Development Service.

While Fannie Mae and Freddie Mac do not have rural mandates they could be purchasing loans from rural markets with greater frequency. Fannie Mae issued specific guidelines for rural underwriting in 1994. And last December regulatory loan purchasing goals for households with less than area household median incomes went into effect, providing Fannie Mae and Freddie Mac with a greater incentive to increase loan purchasing in rural areas. Liquidity in rural housing markets was also improved in 1989 when banks were given access to the 12 district FHLBs that once only served thrifts and mutual savings banks. Through the FHLBs, commercial banks can now pledge residential mortgages as collateral in return for loan advances.

Farmer Mac II is also not alone in its market for USDA guarantees. Informal secondary markets for these loans existed prior to the government-sanctioned secondary market and at least three other companies are actively purchasing guaranteed loans. The combined annual volume of two of these purchasers exceeded Farmer Mac II's 1995 volume of \$56.2 million. Farmer Mac II annual volume has grown steadily and was up from last year's volume of \$47.6 million.

### ***Some Safety and Soundness Concerns***

The new legislation raises concerns about the safety and soundness of this GSE, particularly over long time horizons. This occurs because the legislation dismantles safeguards originally put in place by Congress to keep Farmer Mac from becoming a liability to the U.S. Treasury. Farmer Mac has a \$1.5-billion line of credit with the Treasury. Safety and soundness was compromised by the elimination of the 10-percent reserve and the loan pool diversification standards.

Deleting the 10-percent reserve means that any loan losses will now be charged directly against capital. Farmer Mac is taking on additional credit risk without a meaningful boost in its required capital. By being able to become a portfolio lender, Farmer Mac may also assume new interest rate risk without a meaningful boost in its required capital. Although Farmer Mac's fully phased in capital requirements may be similar to those of housing GSE's, Farmer Mac's portfolio or the loan pools it guarantees will be backed by less uniform and more volatile farm business assets.

Maintaining stringent underwriting standards is more important under this new structure. Due to tight current standards and a strong farm economy Farmer Mac default rates have so far remained very low and losses have been absent. However, over long time horizons, economic and loan conditions can change. Farmer Mac's underwriting standards are only broadly defined by statute and may be relaxed.

As seen during the 1980s, farm business asset values can be unstable. During that period, Midwest farmland asset values plunged by as much as 45 percent and widespread loan losses in excess of \$10 billion were incurred by banks, the FCS, and

life insurance companies. This occurred despite \$133 billion in Federal Government farm price and income supports during the decade and the assumption of billions of dollars in troubled loans by the Federal Government. For this reason the FCS is now required to maintain 7 percent risk-based capital and currently has a capital base of over twice this level.

Farmer Mac's minimum new capital standards require it to maintain 2.75 percent capital for on-balance sheet assets and 0.75 percent for off-balance sheet assets, with risk-based standards still pending. During the late-1980s, the FCS charged off over \$3.7 billion or an equivalent of nearly 5 percent of the total assets held in 1985. The FCS had more lax underwriting standards at that time, but its portfolio was more diverse because it included loans to cooperatives and other activities beyond Farmer Mac's authority. Bailout legislation in 1987 provided the FCS with the ability to borrow over \$4 billion from the U.S. Treasury (\$1.2 billion was borrowed and has since been repaid).

Removal of loan pool diversification standards increases the likelihood that regional or commodity-specific financial problems could impair Farmer Mac's capital if Farmer Mac loan purchases are not broad based. Under the original statute, Farmer Mac was required to ensure that loans in pools were not concentrated geographically or within commodity specialties.

### ***What's Ahead in 1996***

Farmer Mac will first need to work on recapitalizing. This will undoubtedly require the sale of stock. But to gain investor confidence Farmer Mac might first need to establish that its new charter is more viable by showing it can obtain volume. How much volume that might be is uncertain. If it

must first establish a track record it needs to do so relatively quickly because it has only 2 years to bring capital up to at least \$25 million. If Farmer Mac begins to directly purchase loans, it will need to adopt some of the loan administration procedures of primary lenders.

During the next 2 years, Farmer Mac might have difficulty obtaining loans if its new charter does not produce sufficient securitization savings and if commercial banks do not have strong incentives to become active sellers. If either occurs, Farmer Mac may need to cultivate an alternative origination network quickly. Many life insurance companies appear to be unlikely alternatives given their past experience and much of the FCS views Farmer Mac as a direct competitor. If Farmer Mac attracts new entrants into the primary market--such as mortgage companies--added lending competition among lenders could emerge and help to further reduce farm loan rates.

How much capital and loan volume Farmer Mac will need to be viable depends on a number of factors, such as whether it issues mortgage-backed securities or holds loans in portfolio. For example, if it obtained \$2 billion in loan volume, Farmer Mac would need at least \$55 in capital to meet fully phased in capital standards if all of the loans were held in portfolio, but only \$15 million if all of the loans were sold as mortgage-backed securities.

Under the original structure, it was estimated that Farmer Mac needed between \$1 and \$2 billion in annual volume to be profitable. If this range holds true for the new structure, to be profitable Farmer Mac needs to capture roughly 25 percent of the commercially made farm real estate market. This share would be lower if Farmer Mac can develop housing volume or increase Farmer Mac II volume or if some nonreal estate debt can be substituted in for farm real estate debt.

## **Interest Rates on Farm Loans Declined Throughout 1995**

*Further declines expected for 1996.*

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### **Interest Rates Decline Throughout 1995**

Contrary to expectations at the beginning of 1995, interest rates on new farm loans decreased throughout the year, reversing an upward trend that began in 1994. Interest rates on all loans leaped from their fourth-quarter 1994 averages to the first quarter of 1995 and gradually declined thereafter. Interest rates on new farm nonreal estate loans (appendix table 4) decreased from the first through the fourth quarter of 1995 by 80 basis points (a basis point is one-hundredth of 1-percent) for farm banks and by 30 basis points for the Farm Credit System (FCS). Interest rates on new farm real estate loans (appendix table 5) decreased from the first through the fourth quarter of 1995 by about 50 basis points for farm banks, about 40 basis points for FCS lenders, and 10 basis points for life insurance companies. Despite the decline in interest rates on farm loans in 1995, the increase in the farm sector's debt decreased its repayment capacity (figure 10).

The gap between the prime rate and rates on short-term farm loans narrowed throughout 1995. The bank prime rate is a proxy for bank cost-of-loan funds. The gap between the yields on 6-month U.S. T-bills and the interest rate on farm loans remained relatively stable throughout 1995. The gap between yields on 10-year constant maturity U.S. T-bonds and interest rates on farm real estate loans increased by about 100 basis points. Treasuries represent an alternative investment to farm loans for banks and the cost of funds to the FCS.

The downward trend in farm loan rates during 1995 was mostly due to events outside the farm sector. Government and nonfarm private sector interest rates declined as money and capital markets adjusted downward their expectations of U.S. economic growth. The decline in farm loan rates resulted from the decline in farm lender cost of funds and declines in the returns to investing in government and nonfarm private sector securities.

### **Further Declines Expected for 1996**

Interest rates on farm loans are expected to trend downwards throughout 1996. Again, interest rates in the farm sector will reflect mostly events in the larger economy--low rates of U.S. economic growth, a stable and relatively healthy farm economy, and low inflationary expectations. The Fed recently cut both the Federal funds (5.5 to 5.25 percent) and discount rates (5.25 to 5.0). Further reductions are expected over 1996 as the Fed seeks to increase the sluggish rates of growth in the U.S. economy. Changes or expectations of changes in the Federal funds and discount rates have a relatively greater impact on the shorter- rather than longer-term farm interest rates.

The recent cuts by the Fed should have little impact on farm credit markets because the effect had already been incorporated in the expectations of investors in the money and capital markets. Interest rates on short-term, farm nonreal

estate loans are expected to decline by 80 basis points from fourth-quarter 1995 to 8.4 percent by the final quarter of 1996. Interest rates on long-term, real estate farm loans are expected to decline by 60 basis points over the same period.

### **U.S. Government Debt Payments and Farm Interest Rates**

While we do not anticipate the U.S. government will miss or delay any of the scheduled payments on its debt obligations, it might be worthwhile to speculate what might occur in farm credit markets should the unexpected happen.

Interest rates on farm loans follow movements in the yields on U.S. Treasuries. Increases in Treasury yields increase farm sector interest rates of similar maturities. For example, increases in yields on 10-year constant maturity U.S. Treasury bonds would tend to generate increases in long-term farm loans. Decreases in Treasury yields generate the opposite effect.

The immediate effect of a postponement by the U.S. government on its debt payments would probably be a small movement of capital by lenders from Treasury securities to other investments such as farm loans, increasing the supply of farm credit while reducing its cost. The result would probably be a slight increase in the yields on U.S. debt and even smaller change in the interest rates on farm loans made by agricultural banks and life insurance companies. However, the cost of funds for the FCS could rise if investors believe the government has weakened in its implied backing of Farm Credit debt. This could somewhat increase interest rates on FCS farm loans.

To prevent or reduce capital flight from its securities, the U.S. government would have to increase the interest rates offered on sales of its new debt obligations. The increase in Treasury yields would be accompanied by a slight increase in the risk of investing in U.S. Treasuries, which would have lost their former "credit-risk free" status. This would increase somewhat the risk exposure of farm bank portfolios, which would probably respond by adjusting upwards their interest rates on agricultural loans.

Commercial banks and life insurance companies would probably see a small decrease in the value of any Treasury holdings in their portfolios. While this effect would be offset somewhat by an increase in the value of their other financial assets, their net worth would probably decline somewhat. A decrease in lender net worth would increase their aversion to risk, thereby reducing the amount of credit available for some of the more risky farm loan applications.

Figure 9

# **Selected interest rates, selected years**

Percent

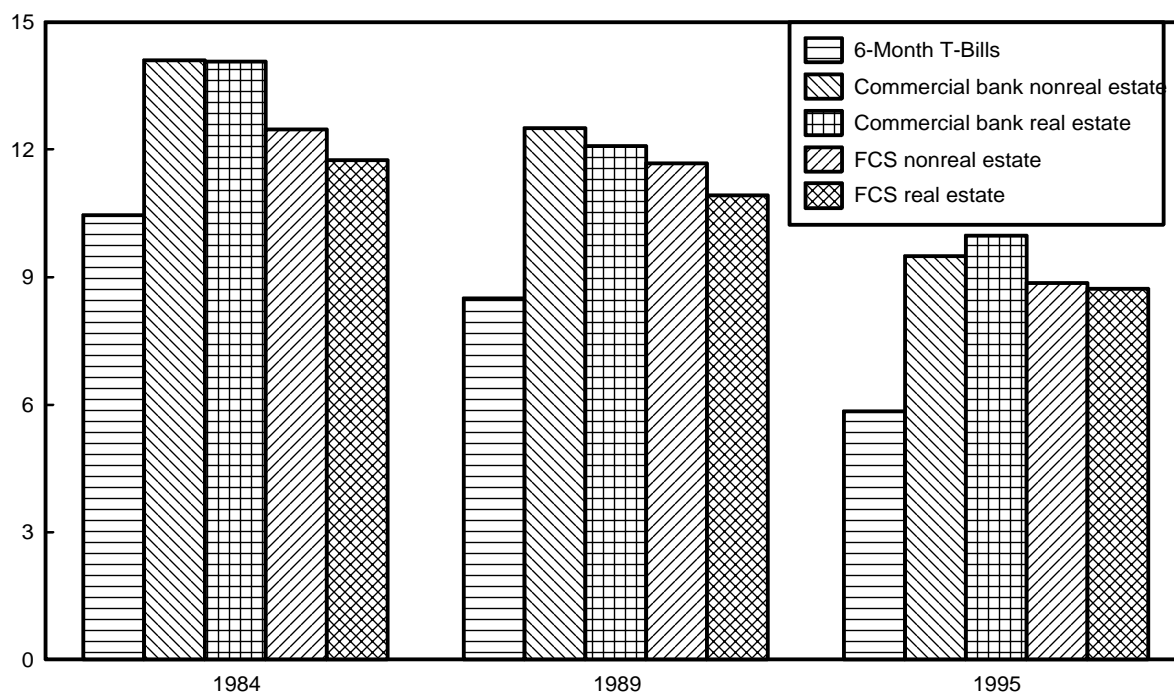
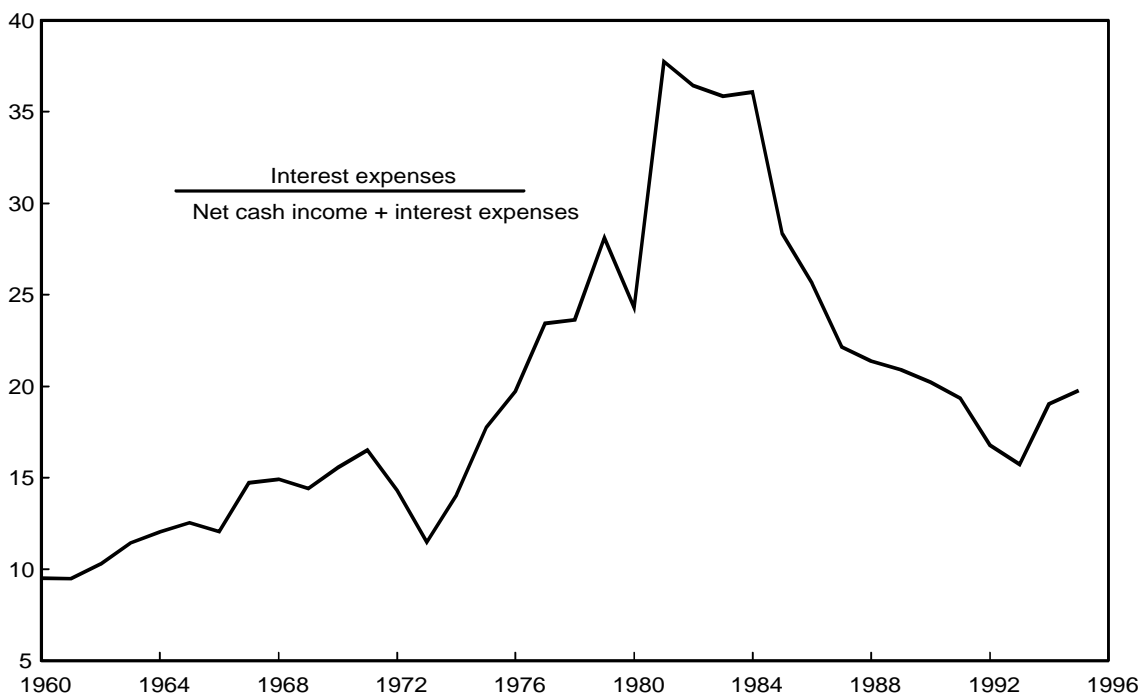


Figure 10

# **Interest expenses as a share of net cash income remain above those levels experience prior to 1975**

Percent



# Rising Farmland Values Help Lenders and Farmers with Real-Estate-Backed Farm Loans

*Farmland value increases in 1994 continued a trend that helped strengthen the farm sector's balance sheet. Further gains are expected to be recorded for 1995 and 1996.*

Farmland is the largest single asset of the farm sector and typically is the largest single investment in a farmer's portfolio. Some 52.3 percent of the total farm sector debt of \$151 billion at the end of 1995 was real estate debt--either mortgages for purchase of farmland or short- or intermediate-term debt secured by farmland. Loans secured by agricultural real estate are vulnerable to swings in land values as the record of the 1980s makes clear. Both farm sector borrowers and lenders suffer during times of sudden declines in farmland values.

Agricultural land values have been on the rise since 1987 when the slide that began in the early 1980s ended. Since that time average farmland values in the Nation have rebounded 38.9 percent, from \$599 per acre to \$832. In real or inflation-adjusted terms (1982 dollars), this amounts to a 6.8 percent gain from the \$518 per-acre low recorded in 1987 to \$553 in January 1995.

The average nominal value of \$832 per acre as of January 1, 1995, surpassed the previous record of \$823 set in 1982. However, on a real basis, the January 1, 1995, average value was still 42 percent below the 1981 peak. The 1993-94 and 1994-95 increases represent the strongest yearly gains, in both nominal and real terms, since the recovery began in 1987. An estimated 5-percent increase in per-acre value of U.S. farm real estate during 1995 will mark the 9th consecutive yearly increase since 1987. Overall, farmland values will likely continue to rise in 1996, and in some regions the increases could be substantial.

In recent years, farm debt to farm income ratios have dropped and farm real estate value increases have led to significantly improved equity positions for many farmers. However, the gains in farmland values and equity have not been uniform across all regions.

Regional 1987-95 comparisons show that some areas of the country have seen much stronger growth in agricultural real estate values than others. Most regions recorded significant gains over the eight-year period. Nominal increases range from a high of 61.9 percent in the Northeast (the only region to record a gain--9.3 percent--between 1982 and 1987), to a low of 3.4 percent in the Southern Plains (table 22). The Corn Belt Region experienced growth (60.9 percent) almost as strong as the Northeast (61.9 percent) (table 22). The Lake States, Appalachia, Southeast, and Pacific Regions also recorded gains above the U.S. average of 38.9 percent over the 1987-95 span.

In addition to the Southern Plains, the Delta, Northern Plains, and Mountain Regions recorded below average gains. The small nominal increase for the Southern Plains translates into a loss of 20.4 percent in real terms during 1987-95. The only other region to experience a negative trend in real terms was the Delta Region, which lost 1.2 percent over the same period.

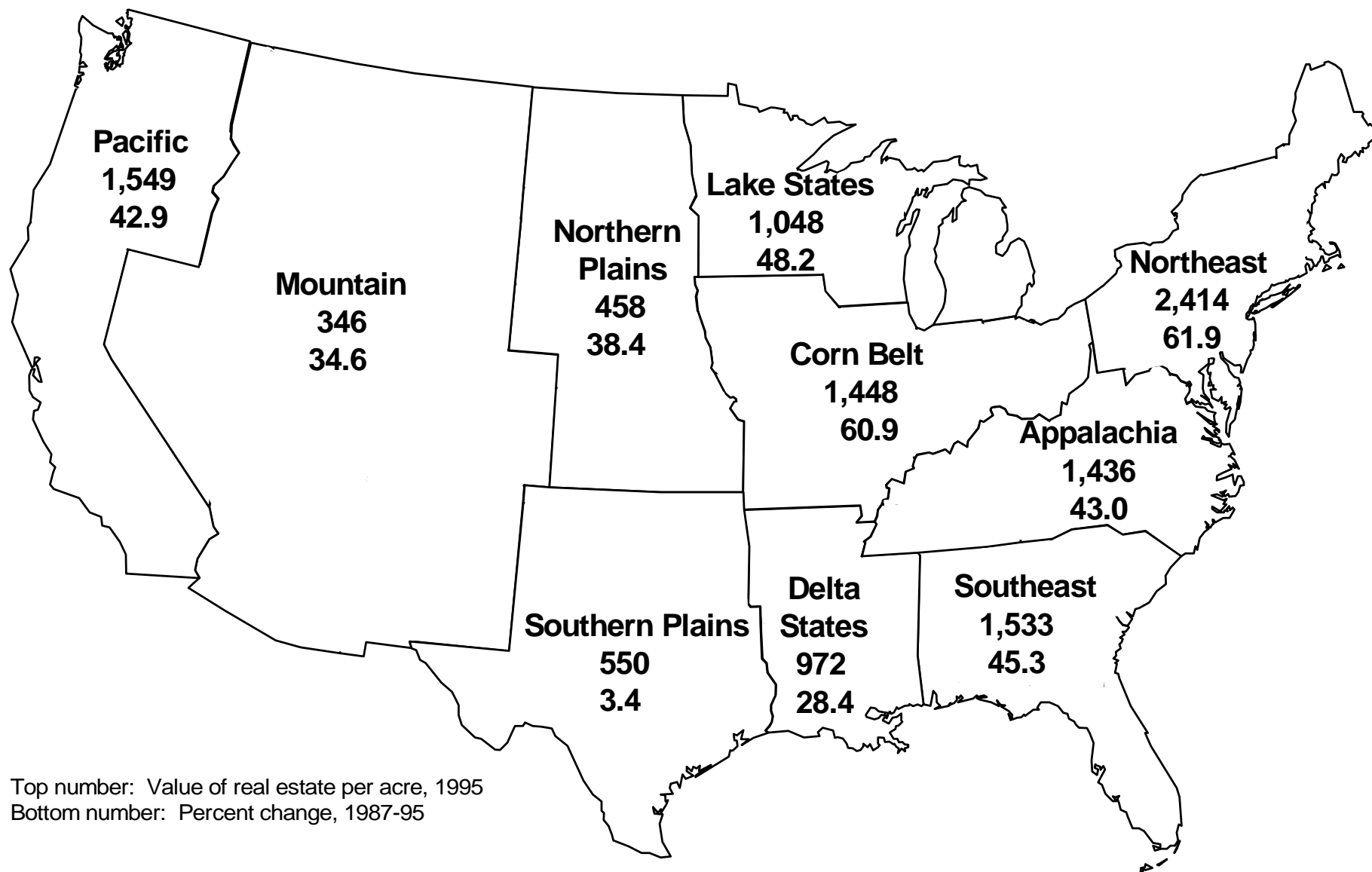
All States recorded increases over the January 1994 to January 1995 period, with the exception of California and New York where values were essentially unchanged. Four States shared the largest increase--13 percent in Alabama, Ohio, Oregon, and Utah. Regionally, the Corn Belt led the Nation with an 8.8-percent increase, moving the 1993 leader, the Mountain States, into second place with an 8.5-percent gain.

**Table 22—Average per acre value of farm real estate, by farm production region, 1987 and 1995**

Region	1987	1995	Change 1987-95
	-----Dollars-----		Percent
Northeast	1,491	2,414	61.9
Lake	707	1,048	48.2
Corn Belt	900	1,448	60.9
Northern Plains	331	458	38.4
Appalachia	1,004	1,436	43.0
Southeast	1,055	1,533	45.3
Delta	757	972	28.4
Southern Plains	532	550	3.4
Mountain	257	346	34.6
Pacific	1,084	1,549	42.9
U.S.	599	832	38.9

Figure 11

Average per acre value of farm real estate, 1995, and percent change, 1987-95, by farm production region



Top number: Value of real estate per acre, 1995  
Bottom number: Percent change, 1987-95



# The Changing Structure of Nonreal Estate Credit Markets

by Charles Dodson<sup>1</sup>

*The availability of leasing and trade credit from nontraditional lenders is changing the structure of farm nonreal estate credit markets. For commercial-sized farms, nontraditional lenders represent the second largest source of debt. Leasing of machinery and equipment is prevalent, especially among crop farms where 20 percent of all commercial-sized farms reported leasing machinery or equipment. The combination of leasing and trade credit is enabling nontraditional lenders to capture market share from traditional lenders. This is especially true for debts of under \$50,000 where nontraditional lenders have a cost advantage. Eighty percent of commercial-sized farms with nonreal estate trade credit owed less than \$50,000 of nonreal estate debt. Leasing and trade credit were more prevalent in the Midwest and less common in the South.*

The environment for financing production agriculture has been undergoing dramatic change in recent years. An increase in the use of trade credit and *nontraditional lenders* along with increased incidence of machinery leasing has heightened the competition *traditional lenders* face in agricultural credit markets. In addition, the ongoing industrialization of U.S. agriculture will likely spur borrowers to change the way they conduct their business and how they relate to lenders. These trends will likely continue and force traditional lenders to adapt new marketing approaches or face significant losses in loan volume. Structural changes in credit markets can also affect Federal credit programs such as those delivered by USDA's Farm Service Agency. This article examines the structural differences between farms that use machinery leasing or manufacturer or dealers financing and comparable farms that do not. Explanations as to why farm operators are choosing nontraditional lenders will be discussed.

Historically, nonreal estate credit markets have been characterized by long term relationships between farmers and lenders. The bank or Farm Credit System association would provide an operating loan and other financing using a security agreement covering the farm's machinery and equipment. Recently, there has been a noticeable increase in the incidence of agricultural input suppliers providing credit to farm operators, suggesting a change in this type of lender-borrower relationship. The impacts of the changing structure of agricultural credit markets are most evident for debt secured by nonreal estate assets where manufacturers and dealers have secured a 16-percent market share among *commercial-sized farms* (figure A-1). In contrast, trade credit represented only 2 percent of operating debt outstanding at year-end. During 1988-93 there was rapid growth in the number of farm input suppliers offering credit and volume of supplier credit extended. These nontraditional lenders doubled, tripled, or even quadrupled the volume of credit extended (Sherrick et al). Additionally, farm operators are using leasing to control assets. This has always been common in real estate but is gaining increasing popularity among nonreal estate assets. Among commercial-sized farms operated by farmers under 40

years old, 20-22 percent have reported leasing some machinery (Dodson and Koenig).

## Data and Methods

Farm-level financial data were provided by the expenditure version of USDA's Farm Cost and Returns Survey (FCRS). The FCRS is a multiple frame stratified random sampling survey that provides farm expense, income, and balance sheet estimates along with operator characteristics for a calendar year. Estimates discussed represent averages of combined year end data for 1991-93. The averaging of 3 years of data was done to increase the reliability of estimates. The expenditure version was the only one that included detailed data on debt. Data were collected on each loan owed by a farm business. Included was year-end balance, interest rate, year loan was acquired, lender, term, and loan type (real estate, nonreal estate, or operating loans). The 1994 survey did not include detailed debt data, while 1995 data are not yet available. The FCRS samples roughly 10,000 farms annually, of which about half respond to the expenditure version of the questionnaire.

## Leasing

Leasing has always been a popular method for nonfarm businesses to acquire operating capital. In contrast, farmers have historically relied on debt or owner equity to finance machinery and equipment. However, evidence from the FCRS shows that leasing of farm machinery and equipment is becoming popular among some farm operators. Among all commercial-sized farms, 15 percent reported leasing some nonreal estate assets (table A-1). Leasing was found to be more common on *crop farms*. Over 55 percent of farms with machinery leases were commercial crop farms. Among all commercial crop farms, 20 percent reported leases for machinery or equipment compared with 15 percent for *livestock farms* (FCRS). This is probably because structuring a lease for tractors, combines, and implements is much easier than for livestock or facilities. Because leasing is a substitute for debt and lessors are primarily manufacturers or dealers,

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*Commercial-sized farms* were defined as those that reported \$50,000 or more of annual sales.

*Crop farms* received over 50 percent of the value of their farm production from crops while *livestock farms* received over 50 percent of their production from livestock.

*Nontraditional lenders* are defined as institutions whose primary contacts with farm operators have historically been for goods and services other than credit (i.e., input suppliers, machinery suppliers, cooperatives, processors, etc.). Because this study focuses on nonreal estate credit, these lenders are most likely to be implement dealers and financing corporations wholly owned by a manufacturer. For the purposes of this paper, nontraditional lenders are referred to as manufacturers and dealers.

*Production regions:*

Northeast = CT, DE, ME, MD, MA, NH, NJ, NY, PA, RI, VT  
Midwest = IL, IN, IA, MI, MN, MO, OH, WI  
Plains = KS, NE, ND, OK, SD, TX  
South = AL, AR, FL, GA, KY, LA, MS, NC, SC, TN, VA, WV  
West = AZ, CA, CO, ID, MT, NV, OR, NM, UT, WA, WY

*Traditional lenders* are defined as institutions whose traditional (historic) contact with farm operators was primarily to provide credit (i.e., commercial banks, Farm Credit System, Insurance companies, USDA's Farm Service Agency).

*Vulnerable farms* were defined as reporting negative net farm income and debt-asset ratios of 0.40 or greater.

leasing will probably mean less farm loan business for traditional lenders.

Manufacturers provide leasing because it enhances the marketability of their product. While a lender would strive to maximize net interest income, a manufacturer would strive to maximize total revenues. If leasing allows manufacturers to differentiate their product, total revenues should increase. Farm operators may choose to lease machinery or equipment for any of a number of reasons. They may find that leasing is less costly than purchasing the equipment or that leasing provides more financial management options. If it costs less to process a lease than to process a loan, farm operators should find a lease to be less expensive than a loan. Also, leasing can increase a farm operator's rate of return or lessen the risk of technical obsolescence.

Advantages in asset disposal can enable a manufacturer to provide loan terms cheaper than for a purchase and finance arrangement. A manufacturer or dealer may be able to more easily resell reconditioned machinery or equipment or to salvage parts. A national manufacturer with many retail outlets may be able to lease the same equipment more than once during a year. For example, a combine can be leased to a wheat farmer in Oklahoma during June and a Kansas or Nebraska wheat farmer in July. Partial-year leasing can make leasing very attractive to an operator. Why buy a tractor or combine that will sit idle for most of the year? A farm operator could lease a combine for 3 months of the year, externalize much of the cost and always have use of the latest technology.

A greater concentration of commercial farms and dealers enhances a manufacturer's ability to sell leased equipment. Consequently, one would expect leasing to be more common in regions characterized by intensive crop production. Over one-half of the farms that lease machinery or equipment were located in the Midwest (table A-1). On average, 17 percent of

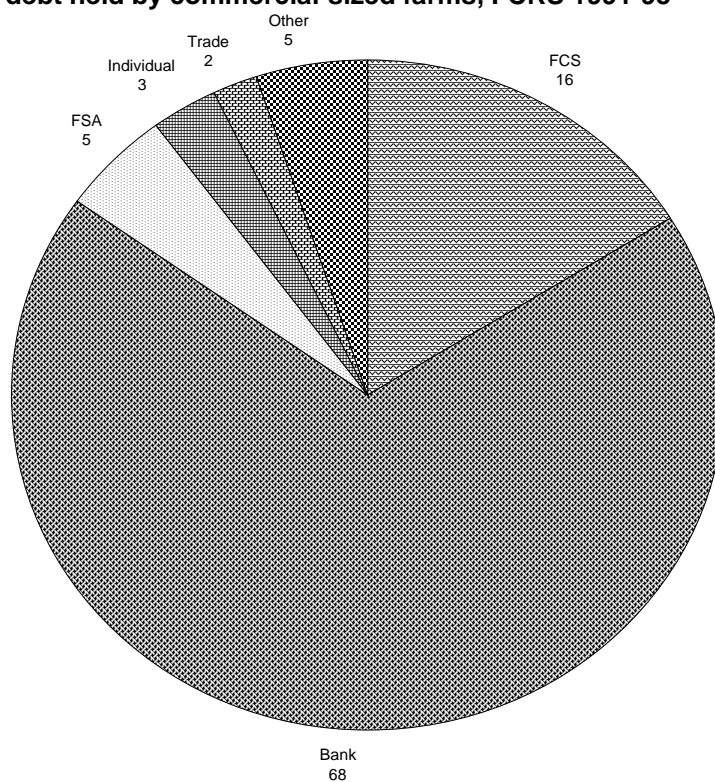
all commercial farms in the Midwest leased at least some of their machinery and equipment, compared with only 7 percent in the South. However, there was no indication that the differences between the South and Midwest could be explained by crop mix because about one-half the commercial farms in each region were crop farms.

Financial management goals or limited financing options can also influence an operator's leasing decision. A farm operator may lease machinery and equipment in order to allocate wealth to other uses, such as land, or to maintain borrowing capacity. In some instances, operators may choose leasing as a last resort because their borrowing capacity has been exhausted. This may have been the case for farms that reported both nonreal estate debt and leases. These farms appeared to have used much of their borrowing capacity and were experiencing more financial stress. On these farms, the ratio of nonreal estate debt plus operating loans to nonreal estate assets was 43 percent (table A-1). Over one-third of these farms reported debt-asset ratios of 0.40 or greater and more were considered financially stressed (12 percent were *vulnerable* to financial failure). Also, one-third of the farms with leases and nonreal estate debt reported negative net farm incomes.

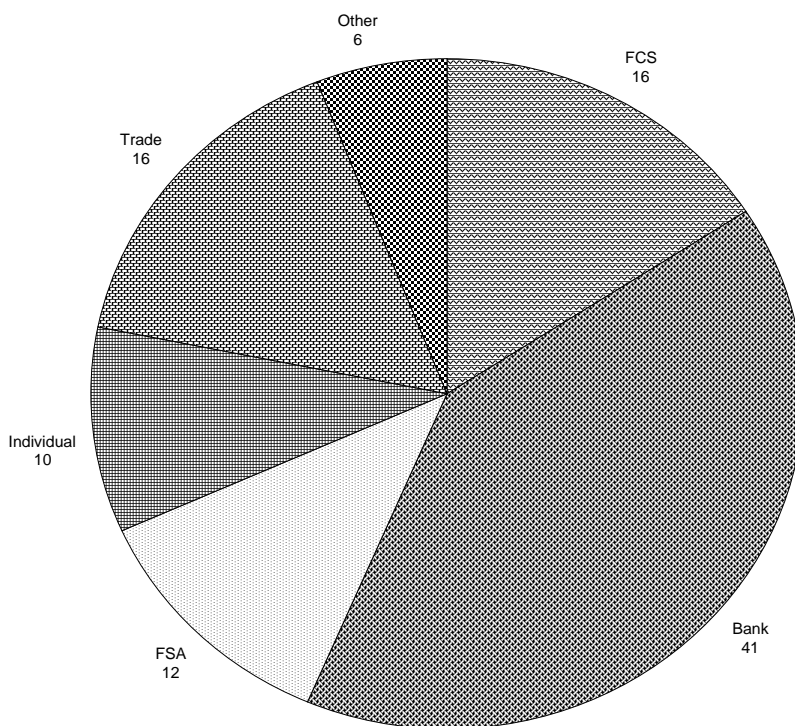
By using leasing, operators can generate higher rates of returns on owned assets which increases borrowing capacity. On average, farms that leased achieved returns on assets of over 3 percent, compared with 1.4 percent for commercial-sized farms that used nonreal estate debt only (table A-1). Another reason a farm operator may lease is that the technical life of an asset may be less than its useful life. With proper maintenance, machinery and equipment may last for 10 or more years, during which time more efficient models may become available. Lease terms can easily be structured to coincide with the technical life of the asset rather than its useful life. Somewhat related is a desire to externalize use and maintenance costs. Manufacturers have more incentive to

Figure A-1

**Market shares by lender for operating and nonreal estate debt held by commercial-sized farms, FCRS 1991-93**



**Operating loans**



**Nonreal estate loans**

**Table A-1—Characteristics of commercial-sized farms for those with machinery leases, machinery leases and nonreal estate debt, nonreal estate debt only, those reporting no lease and no nonreal estate debt, and all commercial-sized farms.**

	No debt no lease	Lease only	Lease w/debt	Debt only	All farms
Percent of farms	64	8	7	21	100
Total assets owned (\$)	750,933	910,344	802,017	616,376	750,259
Total acres operated	1,289	1,325	1,122	1,072	1,245
Gross cash income (\$)	183,913	297,483	323,890	178,935	206,930
Annual sales (percent of farms):					
\$50-\$100,000	46	28	27	38	42
\$100-\$250,000	36	41	41	44	39
\$250-\$500,000	11	18	19	12	12
Over \$500,000	6	13	13	6	7
Regional-specialization: (% of farms)					
Northeast	7	10	6	9	7
Midwest	38	44	53	42	40
Plains	22	23	21	23	22
South	19	9	8	14	17
West	14	15	11	11	14
Crop farms	48	57	55	49	50
Livestock farms	52	43	45	50	50
Debt-asset ratio	12	28	33	26	17
(Nonreal+operating. debt)/ nonreal assets	12	25	43	36	20
Vulnerable (% of total)	3	6	12	9	5
Return on assets (%)	2.7	3.3	3.0	1.4	2.6
Net farm income (\$)	40,824	46,189	43,228	27,941	39,473
NFI > \$ 0 (% of farms)	78	74	67	74	76
Debt per farm (\$):					
Operating loans	43,931	78,645	63,242	27,382	44,565
Nonreal estate	0	0	77,210	57,647	24,340
Real estate	97,962	158,796	107,781	64,186	95,515
Nonreal estate mkt shares:					
FCS	--	--	20	14	16
Banks	--	--	35	44	41
FSA	--	--	11	13	12
Manufacturer & dealer	--	--	18	15	16
Operator age	52	47	45	46	50
Under 36	10	17	17	22	14
36-45	23	28	42	32	27
46-55	24	30	26	24	24
56-65	28	18	12	16	23
Over 65 years	14	7	4	6	12

Source: 1991-93 Farm Costs and Returns Survey.

provide maintenance contracts on leases, keeping maintenance costs low for farm operators.

Empirical evidence shows that commercial-sized farms that reported machinery leases tend to be larger (based on assets owned, annual sales, and acres operated) than farms that reported no leasing activity (table A-1). Operators of many larger, financially sound farms appeared to choose leases over nonreal estate debt. Farms that leased but had no nonreal estate debt were substantially larger, owning over \$150,000 more in farm assets than the typical commercial-sized farm. These farms were also financially stronger and probably could have obtained nonreal estate credit from a traditional lender. Thus, leasing must offer some advantages over credit to larger and more profitable operators.

### Trade Credit

In addition to providing leasing terms, manufacturers and dealers can provide financing either directly or through a wholly owned subsidiary. Most major input suppliers such as John Deere, Ford New Holland, Wayne Feeds, and Pioneer Hi-Breeds have financing programs in place. As with leasing, the objective of trade credit is primarily to support machinery or equipment sales and to build sales volume or promote customer loyalty.

Manufacturers and dealers tend to incur lower costs than traditional lenders on loans under \$50,000 (Henrickson and Boehlje). This provides a competitive advantage in financing single items that cost less than \$50,000 such as tractors, trucks, or implements. Also, manufacturers often have access to low cost money through the issuance of commercial paper that enables them to provide loan terms that may be cheaper than conventional lenders. These aspects make it difficult for traditional lenders to effectively compete with trade credit in terms of cost. As a result, manufacturers and dealers have been capturing market share from traditional lenders.

For commercial-sized crop farms, manufacturers and dealers are the second largest provider of nonreal estate credit, controlling about one-fourth of the market (FCRS). The amount of manufacturer and dealer debt owed per farm is consistent with cost advantages for smaller loan sizes. Among farms with nonreal estate trade credit, nonreal estate debt per farm owed to manufacturers and dealers averaged \$32,975. In comparison, farms with FCS nonreal estate debt averaged \$79,814 per farm of FCS nonreal estate debt, while farms with bank nonreal estate debt averaged \$52,828 of bank nonreal estate debt (FCRS). Eighty-percent of farms with nonreal estate trade credit reported less than \$50,000 owed to manufacturers and dealers (figure A-2). However, smaller loan sizes do not imply a focus on smaller farms. Twenty-six percent of all manufacturer and dealer nonreal estate borrowers had over \$250,000 in annual sales, compared to 17 percent for other borrowers (table A-2).

Manufacturers may be willing to accept lower returns from lending than traditional lenders if the lending operation increases sales. Thus, they may be more likely to provide credit to operators unable to obtain credit from traditional lenders because of high debt levels, low profitability, or operator age. This was supported by FCRS data showing that

manufacturer and dealer borrowers tended to be less solvent than other comparable farms. Over 12 percent were classified as vulnerable compared with 8 percent of farms that borrowed from other lenders (table A-2). Also, farms with trade credit had greater debt levels, with an average debt-asset ratio of 0.29 compared to 0.10 for farms borrowing from other lenders. Manufacturer and dealer borrowers reported a ratio of nonreal estate debt plus operating loans to nonreal estate assets of 0.32 compared with 0.16 for all other farms with nonreal estate debt. Also, manufacturer and dealer borrowers were less profitable, reporting an average return on assets of 1.2 percent with almost one-third reporting negative incomes.

Nonreal estate trade credit tended to be more common among operators under 45 who are more likely to experience credit rationing. Sixty-one percent of manufacturer and dealer borrowers were under 45, compared with 37 percent of all other nonreal estate borrowers (table A-2). As with leasing, manufacturer and dealer credit may be providing an important public policy function by reducing the detrimental effects of credit rationing among traditional lenders. This is important given the reduced emphasis on FSA direct lending and a focus by FCS on more established operators (Koenig & Dodson). On the other hand, the easy availability of credit can encourage operators already financially stressed to become over-extended.

Farm operators seldom rely totally on the manufacturer or dealer for all their nonreal estate credit needs. On average, manufacturers and dealers provide 60 percent of the nonreal estate credit to their customers (FCRS). This compares with 84 percent for FCS, 81 percent for banks, and 78 percent for FSA. Because manufacturers and dealers are not full service lenders, it becomes especially important to maintain good relations with traditional lenders.

Manufacturers and dealer financing is, like leasing, more common among crop farms, with 61 percent of all manufacturer and dealer customers being crop farms (table A-2). Among crop farms, manufacturer and dealer market share was 24 percent, which is second only to banks. In contrast, manufacturer and dealer market share among livestock farms was only 8 percent. This may simply be a consequence of the type of inputs required by crop farms. Crop production requires tractors, combines, and various implements, all of which are produced by manufacturers with established credit programs. Conversely, many of the inputs required by livestock farms (feed, live animals) are produced on the farm.

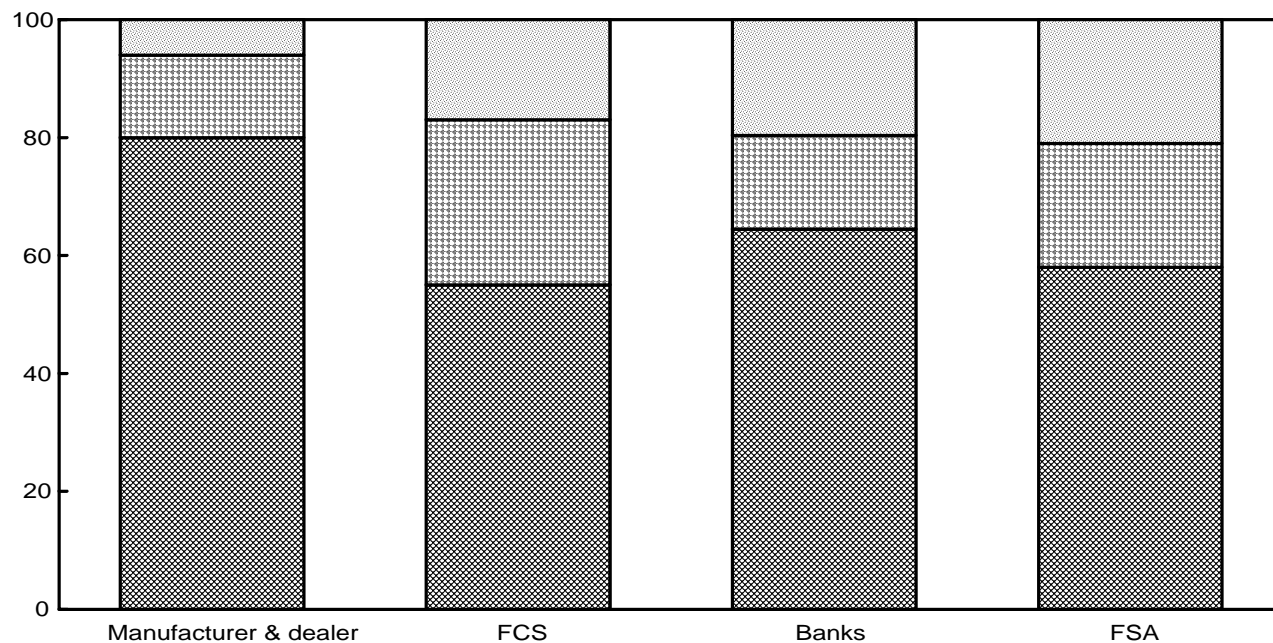
As with leasing, manufacturer and dealer financing was more common in the Midwest and Plains. Combined, these regions include 75 percent of all manufacturer and dealer borrowers (table A-2). Manufacturers probably find that the greater concentration of dealers and commercial farms in these regions makes marketing easier.

There were some differences between lessees and manufacturer and dealer borrowers with respect to farm size and operator age. Commercial-sized farms that leased machinery were noticeably larger than average. In contrast, farms reporting nonreal estate trade credit more closely reflected the average size commercial farm. Operators using trade credit tended to be younger than average while those

Figure A-2

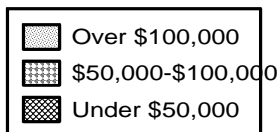
**Of all commercial-sized farms with nonreal estate trade credit, 80 percent owed less than \$50,000 to manufacturers and dealers**

Percent of farms



Source: Farm Costs and Returns Survey, 1991-93.

Amount of nonreal  
estate debt owed  
to lender/farm:



**Table A-2—Characteristics of commercial-sized farms for those using nonreal estate trade credit, traditional lender nonreal estate credit, those with no nonreal estate debt, and all commercial-sized farms.**

	Non-Trade	Trade	No nonreal debt	All farms
Percent of farms	49	8	43	100
Total assets owned (\$)	758,391	712,904	748,134	750,259
Total acres operated	1,213	1,326	1,265	1,245
Gross cash income (\$)	207,176	219,855	204,134	206,930
Annual sales (% of farms):				
\$50-\$100,000	43	29	42	42
\$100-\$250,000	39	46	37	39
\$250-\$500,000	10	17	14	12
Over \$500,000	7	9	7	7
Regional-specialization (% of farms):				
Northeast	9	6	6	7
Midwest	39	45	41	40
Plains	20	30	21	22
South	19	9	15	17
West	14	10	14	14
Crop farms	48	61	50	50
Livestock farms	51	39	50	50
Debt-asset ratio	10	29	22	17
(Nonreal+operating. debt)/nonreal assets	16	32	22	20
Vulnerable (% of total)	4	12	6	5
Return on assets (%)	2.8	1.2	2.5	2.6
Net farm income (\$)	44,389	29,326	35,771	39,473
NFI > \$ 0 (% of total)	79	69	75	76
Debt per farm (\$):				
Operating loans	32,106	44,822	50,080	44,565
Nonreal estate	65,817	52,246	0	24,340
Real estate	66,149	94,961	103,789	95,515
Nonreal estate mkt shares:				
FCS	19	7	--	16
Banks	49	19	--	41
FSA	14	8	--	12
Manufacturer & dealer	0	59	--	16
Operator age	51	44	49	50
Under 36	13	23	13	14
36-45	24	38	27	27
46-55	22	21	28	24
56-65	26	14	23	23
Over 65 years	15	4	9	12
Farms with mach. leases	9	27	18	15

Source: 1991-93 Farm Costs and Returns Survey.

using leasing were not. Outside of these characteristics, farms that lease and those that use manufacturer and dealers for nonreal estate credit are similar. Farms that reported both leases and nonreal estate debt were more likely to owe debt to manufacturers or dealers. A likely explanation for this similarity is that manufacturers and dealers frequently offer both of these options to their customers.

### Impacts on Lenders

Because trade credit and leasing appear to be closely related, many of the implications for lenders are the same. In most cases trade credit and leasing appear to substitute for traditional financing. Most operators using machinery leasing or nonreal estate trade credit were financially strong and would be eligible for conventional financing. Thus, the availability of leasing and trade credit means there will be more competition and probably losses in loan volume for traditional lenders. Commercial banks stand to lose the most because of their concentration in the Midwest, their focus on smaller size loans, and their dependence on nonreal estate debt for loan volume. On the other hand, FCS stands to lose less, because of its focus on larger loans, regional diversity, and reliance on real estate loans for a majority of its loan volume. Both leasing and trade credit were most prevalent in the Midwest where banks dominate nonreal estate lending (table A-1; table A-2). The FCS tends to have a greater presence in the South where leasing and trade credit are less prevalent.

Cost advantages held by manufacturers and dealers for loans under \$50,000 will have greater impacts for banks. Banks, as well as other lenders, face the risk of losing their customer base in this market. This is because manufacturers and dealers could supply most of the nonreal estate credit for farms with smaller loan demands. Manufacturers and dealers supply two-thirds of all nonreal estate credit when the amount owed them is less than \$50,000 (FCRS). For these same farms, banks supply only 7 percent of nonreal estate debt. In contrast, manufacturer's and dealer's share of the nonreal estate market falls among borrowers who require more than \$50,000. Among these farms, manufacturer and dealers supply 42 percent and banks supply over 50 percent of nonreal estate credit. The growth of leasing further contributes to bank's loss of the small loan market. Banks tend to compete with leasing on operations with less credit demand. On farms that reported both leases and bank debt, average bank nonreal estate debt was \$56,500.

FCS is more heavily involved in financing large operations and larger loan sizes. Over one-third of the commercial-sized operators with FCS nonreal estate debt reported over \$750,000 in farm assets, compared with 23 percent for all other lenders (FCRS). Consequently, FCS and manufacturers will likely face head-to-head competition for the credit business of larger farms. Manufacturers and dealers probably can not provide all of the nonreal estate capital needs for these larger farms. It is unlikely, therefore, that FCS would completely lose customers to manufacturers and dealers, but it would probably lose loan volume. The sharing of customers by FCS and manufacturers will require that these institutions strive to maintain good relationships.

The availability of trade credit for nonreal estate assets and leasing not only affects private lenders but also public sector lenders such as USDA's Farm Service Agency (FSA) and programs delivered by State governments. Many of these programs have been enacted because of perceived problems caused by rationing or restraining credit to young, or financially stressed operators. However, leasing and trade credit appears to negate many of the effects of credit rationing, at least with respect to nonreal estate credit. There may be a need to reexamine how these programs are targeted. For example, FSA may need to target its nonreal estate loan funds to livestock operations or in regions other than the Midwest.

If traditional lenders choose to compete with manufacturers and dealers, they will need to find lower cost procedures for delivering smaller loans or provide a broader selection of services. Because of reduced market share or declines in overall loan volume, the FCS and banks may need to examine other markets. Lending for rural housing or nonfarm businesses provides viable alternatives for banks. However, smaller banks in isolated rural markets will be more adversely affected because alternative lending outlets may not exist. The fact that nontraditional lenders are more active among smaller loan sizes, crop farms, and farms in the Midwest, leaves market niches available to FCS and banks. The growth in leasing and nonreal estate trade credit is greatest in machinery markets such as tractors, combines, and implements. Hence, traditional lenders may want to orient themselves more toward financing of livestock or farm buildings. Because bank loans are more prevalent among livestock farms than crop farms (market shares of 47 versus 35 percent), banks will have an advantage in serving these groups. Traditional lenders may focus more of their marketing efforts in regions where manufacturers are less prevalent as a source of credit such as the South, Mountain, and Northeast.

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# Interest Rate Derivatives: Impacts on Farm Financial Risk and Credit

by Ted Covey<sup>1</sup>

*The farm credit crisis of the 1980s taught the farm sector the dangers of assuming interest rate stability. Unfavorable movements in interest rates can have negative impacts on farm sector net income and wealth. One highly controversial approach to managing farm sector interest rate risk is derivative contracts: futures, options, and swaps. While derivatives offer farmers protection against unfavorable interest rate changes, their complexity and cost make them more appropriate for the larger financial institutions serving the farm sector. This raises the issue of whether derivatives, like equities, are too risky for banks and Farm Credit System lenders. Also at issue is whether derivatives might compete with farm loans in lenders' portfolios, reducing the amount of credit available to farmers.*

## Introduction

While the term "derivative" is new and usually associated with financial markets, the farm sector has long been familiar with derivatives such as commodity futures and options.

Derivatives offer the possibility of large speculative gains (or losses). It is the large losses in the quest for large gains that has attracted the most media coverage as well as given derivatives its bad reputation among some groups.

Derivatives also offer inventory managers in the "cash" commodity and financial markets the opportunity to reduce their exposure to unexpected, unfavorable movements in the price of their product. For example, commodity futures offer farmers, cattle feeders, or grain-elevator operators the opportunity to hedge or reduce the risk of unanticipated adverse movements in the price of their products.

The financial crisis of the 1980s demonstrated that the farm sector was vulnerable to another type of risk: adverse and unanticipated interest rate movements. This article provides an introduction to interest rate derivatives and considers how they might affect lender financial risk as well as the cost and availability of credit to farmers.

## Interest Rate Risk

Interest rate risk is the result of unexpected, adverse movements in future interest rates that can decrease a farmer or lender's future income or net worth. Unanticipated or unexpected means the difference between the rates the lender expected to pay and the actual rates paid. One study found that a 1-percentage point change in interest rates would change net farm income by 10 percent (Drabenstott and Heffernan).

Farmers face risks from unanticipated increases in interest rates. If a farmer is holding a variable rate loan, the farmer bears the risk that interest rates will increase more than anticipated, resulting in higher than planned future interest

expenses. Farmers' investments in financial securities will decline in value as interest rates unexpectedly rise.

Farmers also face interest rate risk when taking out a fixed rate loan. As borrowers, the risk is that interest rates will subsequently decline and farmers will be paying higher interest expenses than if the loan had been made at a later date.

Lenders also face interest rate risk. One way they might handle risk is to match the maturities of their assets (e.g. loans) and liabilities (e.g. certificates of deposit). Derivatives offer an alternative way of reducing their interest rate risk exposure.

To the lender making a fixed rate loan and borrowing short while lending long (i.e. the maturities of their loans are longer than their deposits), unexpectedly higher interest rates mean lower than expected profits or even a loss.

Farm asset values are also affected by interest rate movements. Farm assets, especially land, are alternative investments to financial assets. Asset values usually decline as interest rates increase, as occurred in the early 1980s. An unplanned increase in interest rates would increase farmer interest rate expenses while decreasing the value of the asset acting as the loan's collateral. This hits the farm sector with an unpleasant "double whammy."

## Interest Rate Derivatives

The three primary types of derivatives are futures, options on futures, and swaps. Futures and options are standardized contracts traded in centralized, organized markets such as the Chicago Board of Trade. Swaps are custom-designed by their users to meet their specific financial situation and are traded in the over-the-counter market.

An interest rate futures contract is bought or sold through a broker and obligates the holder to deliver or take delivery of some debt security, e.g. a Treasury bond, at a specified future delivery period at an agreed upon price.

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Options on interest rate futures give the holder the right without obligation to buy or sell a futures contract at a specific price (called the exercise or strike price) within a given period. An option to buy is called a “call,” and an option to sell is called a “put.” The holder has the “option” to simply let the option expire without taking a position in futures if interest rates fail to move as the option-holder had hoped or feared.

When used as a risk-management tool, options lock-in a floor or cap on a price or interest rate, acting as a sort of insurance policy. The option holder (e.g. a farm lender) is willing to accept a known loss (the cost of the option or premium) to be protected for the possibility of a greater loss.

Interest rate swaps are a more recent innovation and thus less familiar to the farm sector. For example, swaps involve two lenders “swapping” or exchanging the cash flows from two loans. Usually this involves a lender(s) with a fixed rate loan swapping his or her cash flows on predetermined settlement dates with a lender(s) who holds a variable rate loan with the same principal amount. Usually only the net interest payments are exchanged. Swaps are created when the users feel their financial needs are not met by futures and options. Unlike futures and options, swaps do not have an active resale market or a clearinghouse to guarantee performance of the contract’s requirements. This greatly increases the liquidity and credit risk associated with their use.

### **Who Uses Interest Rate Derivatives?**

Large lenders such as large commercial banks, life insurance companies, and Farm Credit Banks (FCBs) are the primary users of interest rate derivatives. Derivatives are more appropriate for large lenders who can develop the expertise and allocate time to monitor them.

The Derivatives Work Group of the Farm Credit Administration (FCA) reported that most FCBs use only interest rate swaps. The report noted that as of December 31, 1994, FCBs held \$13 billion in derivatives with a credit risk exposure of \$60 million. This \$60 million is relatively small in contrast to the FCS’s credit risk exposure from its \$60 billion in loans.

The ten U.S. commercial banks with the largest dollar amount of derivative contracts outstanding for the same time held \$14.5 trillion with a credit risk exposure of \$138 billion. This represented almost a tripling of bank involvement in derivatives from 1990 to 1995.

### **How Can Lenders and Farmers Use Interest Rate Derivatives?**

Lenders or farmers can use interest rate derivatives to protect the value of their portfolios against adverse interest rate movements. For example, a lender who has made long-term, fixed-rate real estate farm loans financed by shorter-term variable cost funds or a farmer who has invested in long-term bonds can sell interest rate futures or buy interest rate puts. A subsequent increase in interest rates that reduces the value of the lender’s and farmer’s portfolio will be offset by the increase in the value of the farmer or lender’s position in futures or options. According to the FCA, the FCS uses swaps

to match cash in-flows from its loans to the cash out-flows on its securities used to raise funds.

A study at Temple University showed that the Bank for Cooperatives can use Treasury bill futures to hedge against unanticipated increases in its 6-months ahead borrowing costs (Severn).

Farmers could sell interest rate futures to offset losses on variable rate loans resulting from increases in interest rates. Given an increase in interest rates, the profit from the futures position at the time of the loan rate’s adjustment would compensate the farmer for the higher loan rate. However, this simple scenario is complicated by: futures margin requirements, futures mark-to-market feature (in futures markets, traders are required to make payments in cash on any losses by the end of the trading day on which they occur), the large size of futures contracts in contrast to the smaller loan needs of most farmers, that farm loans do not have exact, corresponding futures contracts, and the mismatch between the maturities of interest rate futures contracts and farm loans. While options mitigate some of these problems, some farmers may prefer entering into an interest rate swap agreement with their lender.

Lenders can act as brokers or counterparties for agribusinesses in interest rate swaps. As brokers, lenders match their customers with others who have offsetting financial needs. This is often difficult. Thus, more often lenders assume the counterparty’s role, profiting for their services by paying or receiving more than a non-lender counterparty would.

Interest rate caps protect farmers against unexpected increases in interest rates by paying the farmer the difference whenever the loan rate exceeds the cap rate. Interest rate floors protect the lender against unplanned large decreases in interest rates.

Farmers holding variable rate loans can protect themselves against adverse interest rate movements by purchasing from a lender an over-the-counter derivative called an interest rate collar. Collars are created when a farmer-borrower simultaneously purchases a cap and sells a floor to the lender. Interest rate collars establish a range within which the loan’s rate may move regardless of changes in the loan’s index rate. While selling a floor means the farmer foregoes savings if interest rates subsequently fall below the floor rate, the initial payment the farmer receives for the floor offsets the cost of the cap.

Derivatives provide lenders revenue sources beyond their traditional operations. Managing derivatives for farmer-clients allows a lender to handle a wider range of the farmer’s financing needs while reducing the potential for interaction between the farmer and the lender’s competitors.

### **Lenders and Derivatives: Risky Business?**

An issue currently under debate is whether derivatives, like stock ownership, are too risky for banks. Recent and heavily publicized financial disasters such as England’s Barings Bank and Orange County’s bankruptcy have raised concerns that financial derivatives create more risk than they solve.

Economists divide the risks arising from derivatives into several classes: liquidity, credit, price, operating, valuation, regulatory, and systemic.

Liquidity risk is the probability a loss will occur because the derivative must be sold immediately. This is a particular problem for over-the-counter derivatives like swaps.

Credit or default risk is the probability of default by one of the parties to a derivative contract. The existence of a clearinghouse and margin requirements eliminates credit risk for futures and options. Credit risk is especially relevant for swaps. This risk can be mitigated by a lender's careful evaluation and monitoring of the other party's creditworthiness and by requiring collateral. The use of netting agreements, which stipulate that all of a lender's derivative contracts with the other party are closed out if that party defaults on any one derivative contract, has been a popular way to reduce credit risk exposure.

Price risk is the probability that the derivative's value may decline over time. For example, the FCS showed an unrealized loss of \$107.6 million due to adverse interest movements' effect on the value of its derivative holdings. However, it is misleading to consider the price risk of derivatives alone, especially if the derivatives are being used to reduce the lender's overall portfolio price risk.

Operating risk is concerned with monitoring and controlling the assumption of risk on behalf of the firm by its representatives. Because of the complexity of derivatives and their potential volatility, the cost of excessive risk taking, ignorance, and human error can be exorbitant. The collapse of Barings Bank and Orange County California's bankruptcy are examples.

Valuation risk is the problem of assigning a value or price to a derivative or any asset that trades infrequently, such as an interest rate swap. The value of these derivatives or assets is calculated using mathematical models based on assumptions of underlying market conditions. If these assumption do not hold, the models generate unrealistic valuations.

Regulatory risk is the probability that regulators' treatment of derivatives might change in the future. Regulatory risk is higher for derivatives, especially swaps, because of their relative newness, rapid evolution, and complexity.

Systemic risk causes policy makers and regulators the greatest concern. This is the chance that the financial failure by one or more derivative market participants could cause a chain reaction throughout the financial markets. One preliminary study found although the banking system had a large exposure to interest rate increases, it seemed to have hedged most of the risk at the time of their study (Gorton and Rosen).

### **Derivatives: Impact on Farm Credit**

A concern of policy makers is the effect derivatives might have on credit availability and cost in the farm sector. One argument against lender involvement in interest rate derivatives is that they would replace farm loans in the lenders' portfolio. Proponents respond that derivatives allow lenders to reduce their risk in farm lending while managing their portfolios' overall interest rate risk exposure, increasing the growth rate in loans to agriculture. If so, regulatory constraints on lender involvement in derivatives could reduce future growth in farm lending.

### **Conclusions**

The current situation of relatively stable low interest rates may lure the farm sector into a sense of apathy towards interest rate risk management. The experience of the farm sector in the 1980s demonstrated the risks that come from making farm debt decisions on the assumption of stable interest rates. Derivatives offer an alternative to relying on one's interest rate predictions. If government continues to withdraw from the farm markets, and given the current trend toward larger farms and lenders, derivatives will probably become an increasingly used risk management tool. The well-publicized financial disasters in the private and government sectors is an advance warning to agriculture that derivatives are a double-edged sword.

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# List of Tables

Table	Page
1. Distribution of farm business debt, by lender, December 31, 1995 .....	7
2. Delinquent farm loan volume, by lender, 1986-95 .....	7
3. Farm loan losses (net chargeoffs), by lender, 1984-95 .....	7
4. Nonperforming loans as a percentage of total loans, by type of bank, 1987-95 .....	9
5. Number of agricultural banks, by definition, 1987-95 .....	9
6. Selected bank performance measures, by type of bank, 1987-95 .....	9
7. Agricultural lending of agricultural and nonagricultural banks, by bank size, June 30, 1995 .....	11
8. Selected commercial bank solvency and liquidity ratios, by bank size, June 30, 1995 .....	11
9. Selected commercial bank profitability and efficiency measures, by bank size, June 30, 1995 .....	11
10. Farm Credit System loan volume, by loan type, December 31, 1989-94 and September 30, 1995 .....	13
11. Farm Credit System income statement, December 31, 1989-94 and September 30, 1995 .....	13
12. Farm Credit System financial indicators, December 31, 1989-94 and September 30, 1995 .....	13
13. Farm Credit System district-level financial statistics .....	15
14. Farm Service Agency farmer program obligations, September 30, 1986 to September 30, 1995 .....	19
15. Farm Service Agency major farmer program apportionment and obligations, fiscal 1995, and apportionment, fiscal 1996 .....	19
16. Farm Service Agency major farmer program appropriations and obligations, September 30, 1986 to September 30, fiscal 1995 .....	20
17. Farm Service Agency direct farmer loan program delinquencies, September 30, 1986 to September 30, 1995 .....	20
18. Life insurance company mortgage loan delinquencies, 1988-95 .....	23
19. Life insurance company loans in process of foreclosure, 1988-95 .....	23
20. Life insurance company mortgage loans foreclosed, 1982-95 .....	23
21. Farm real estate loans held by life insurance companies, 1980, 1992, and 1994, and farm loan market status, 1996 .....	24
22. Average per acre value of farm real estate, by farm production region, 1987 and 1995 .....	31
Special Articles	
A-1. Characteristics of commercial-sized farms for those with machinery leases, machinery leases and nonreal estate debt, nonreal estate debt only, those reporting no lease and no nonreal estate debt, and all commercial-sized farms .....	36
A-2. Characteristics of commercial-sized farms for those using nonreal estate trade credit, traditional lender nonreal estate credit, those with no nonreal estate debt, and all commercial-sized farms .....	39
Appendix Tables	
1. Total farm business debt by lender, December 31, 1978-95 .....	45
2. Real estate farm business debt by lender, December 31, 1978-95 .....	46
3. Nonreal estate farm business debt by lender, December 31, 1978-95 .....	47
4. Interest rates on short- and intermediate-term loans, 1960-95 .....	48
5. Interest rates on long-term loans, 1960-95 .....	49
6. Commercial bank real estate lending by type of bank, June 30, 1995 .....	50
7. Banks reporting nonperforming loans greater than capital, 1985-95 .....	50
8. Commercial bank failures, 1982-95 .....	50
9. Characteristics of Farmer Mac I loan pools .....	51

**Appendix table 1—Total farm business debt by lender, December 31, 1978-95**

	Debt owed to reporting institutions					Individuals and others 1/	Total debt
	Farm Credit System	Commercial banks	Farm Service Agency	Life insurance companies	Total		
Million dollars							
1978	37,564	34,435	8,833	9,698	90,529	36,871	127,400
1979	45,376	37,125	14,442	11,278	108,222	43,329	151,551
1980	52,974	37,751	17,464	11,998	120,188	46,636	166,824
1981	61,566	38,798	20,802	12,150	133,316	49,065	182,381
1982	64,220	41,890	21,274	11,829	139,214	49,592	188,806
1983	63,710	45,422	21,428	11,668	142,228	48,842	191,070
1984	64,688	47,245	23,262	11,891	147,086	46,701	193,787
1985	56,169	44,470	24,535	11,273	136,447	41,152	177,599
1986	45,909	41,621	24,138	10,377	122,044	34,926	156,970
1987	40,030	41,130	23,553	9,355	114,069	30,342	144,411
1988	37,211	42,742	21,879	9,039	110,873	28,694	139,567
1989	36,440	44,929	19,047	9,113	109,529	28,330	137,859
1990	35,773	47,556	17,014	9,704	110,046	27,916	137,962
1991	35,527	50,271	15,253	9,546	110,598	28,620	139,218
1992	35,753	51,669	13,538	8,765	109,725	29,327	139,052
1993	35,429	54,533	12,076	8,985	111,024	30,929	141,953
1994	35,763	57,800	11,482	9,023	114,069	32,693	146,762
1995P	37,318	59,945	10,489	9,152	116,904	34,141	151,045
Percent change in year							
1978	13.9	10.1	38.5	19.0	14.9	15.1	14.9
1979	20.8	7.8	63.5	16.3	19.5	17.5	19.0
1980	16.7	1.7	20.9	6.4	11.1	7.6	10.1
1981	16.2	2.8	19.1	1.3	10.9	5.2	9.3
1982	4.3	8.0	2.2	-2.6	4.4	1.1	3.5
1983	-0.8	8.4	0.7	-1.4	2.2	-1.5	1.2
1984	1.5	4.0	8.6	1.9	3.4	-4.4	1.4
1985	-13.2	-5.9	5.5	-5.2	-7.2	-11.9	-8.4
1986	-18.3	-6.4	-1.6	-8.0	-10.6	-15.1	-11.6
1987	-12.8	-1.2	-2.4	-9.8	-6.5	-13.1	-8.0
1988	-7.0	3.9	-7.1	-3.4	-2.8	-5.4	-3.4
1989	-2.1	5.1	-12.9	0.8	-1.2	-1.2	-1.2
1990	-1.8	5.8	-10.7	6.5	0.5	-1.4	0.1
1991	-0.7	5.7	-10.3	-1.6	0.5	2.5	0.9
1992	0.6	2.8	-11.2	-8.2	-0.8	2.5	-0.1
1993	-0.9	5.5	-10.8	2.5	1.2	5.5	2.1
1994	0.9	6.0	-4.9	0.4	2.7	5.7	3.4
1995P	4.3	3.7	-8.7	1.4	2.5	4.4	2.9
Percentage distribution of total debt							
1978	29.5	27.0	6.9	7.6	71.1	28.9	100.0
1979	29.9	24.5	9.5	7.4	71.4	28.6	100.0
1980	31.8	22.6	10.5	7.2	72.0	28.0	100.0
1981	33.8	21.3	11.4	6.7	73.1	26.9	100.0
1982	34.0	22.2	11.3	6.3	73.7	26.3	100.0
1983	33.3	23.8	11.2	6.1	74.4	25.6	100.0
1984	33.4	24.4	12.0	6.1	75.9	24.1	100.0
1985	31.6	25.0	13.8	6.3	76.8	23.2	100.0
1986	29.2	26.5	15.4	6.6	77.7	22.3	100.0
1987	27.7	28.5	16.3	6.5	79.0	21.0	100.0
1988	26.7	30.6	15.7	6.5	79.5	20.5	100.0
1989	26.4	32.6	13.8	6.6	79.5	20.5	100.0
1990	25.9	34.5	12.3	7.0	79.8	20.2	100.0
1991	25.5	36.1	11.0	6.9	79.4	20.6	100.0
1992	25.7	37.2	9.7	6.3	78.9	21.1	100.0
1993	25.0	38.4	8.5	6.3	78.2	21.8	100.0
1994	24.4	39.4	7.8	6.1	77.7	22.3	100.0
1995P	24.7	39.7	6.9	6.0	77.4	22.6	100.0

P = Preliminary. 1/ Includes individuals and others (land for contract, merchants' and dealers' credit, etc.), CCC storage and drying facilities loans, and Farm loans.

**Appendix table 2—Real estate farm business debt by lender, December 31, 1978-95**

	Debt owed to reporting institutions					Individuals and others 1/	CCC storage and drying facilities	Total real estate
	Farm Credit System	Farm Service Agency	Life insurance companies	Commercial banks	Total			
Million dollars								
1978	22,686	3,746	9,698	7,717	43,847	21,712	1,148	66,707
1979	27,322	6,254	11,278	7,798	52,653	25,660	1,391	79,704
1980	33,225	7,435	11,998	7,765	60,423	27,813	1,456	89,692
1981	40,298	8,096	12,150	7,584	68,128	29,318	1,342	98,788
1982	43,661	8,298	11,829	7,568	71,357	29,326	1,127	101,810
1983	44,318	8,573	11,668	8,347	72,906	29,388	888	103,182
1984	46,596	9,523	11,891	9,626	77,636	28,438	623	106,697
1985	42,169	9,821	11,273	10,732	73,994	25,775	307	100,076
1986	35,593	9,713	10,377	11,942	67,725	22,660	123	90,408
1987	30,646	9,430	9,355	13,541	62,972	19,380	46	82,398
1988	28,445	8,980	9,039	14,434	60,898	16,914	21	77,833
1989	26,896	8,203	9,113	15,685	59,898	16,068	12	75,978
1990	25,924	7,639	9,704	16,288	59,556	15,169	7	74,732
1991	25,305	7,041	9,546	17,417	59,308	15,632	4	74,944
1992	25,408	6,394	8,765	18,757	59,324	16,095	2	75,421
1993	24,889	5,837	8,985	19,595	59,307	16,719	0	76,026
1994	24,583	5,463	9,023	21,070	60,139	17,503	0	77,642
1995P	24,377	5,100	9,152	22,420	61,049	17,971	0	79,020
Percent change in year								
1978	15.5	3.7	19.0	10.3	14.2	11.0	133.3	14.1
1979	20.4	67.0	16.3	1.0	20.1	18.2	21.2	19.5
1980	21.6	18.9	6.4	-0.4	14.8	8.4	4.7	12.5
1981	21.3	8.9	1.3	-2.3	12.8	5.4	-7.8	10.1
1982	8.3	2.5	-2.6	-0.2	4.7	0.0	-16.0	3.1
1983	1.5	3.3	-1.4	10.3	2.2	0.2	-21.2	1.3
1984	5.1	11.1	1.9	15.3	6.5	-3.2	-29.8	3.4
1985	-9.5	3.1	-5.2	11.5	-4.7	-9.4	-50.7	-6.2
1986	-15.6	-1.1	-7.9	11.3	-8.5	-12.1	-59.9	-9.7
1987	-13.9	-2.9	-9.8	13.4	-7.0	-14.5	-62.6	-8.9
1988	-7.2	-4.8	-3.4	6.6	-3.3	-12.7	-54.9	-5.5
1989	-5.4	-8.6	0.8	8.7	-1.6	-5.0	-43.9	-2.4
1990	-3.6	-6.9	6.5	3.8	-0.6	-5.6	-43.8	-1.6
1991	-2.4	-7.8	-1.6	6.9	-0.4	3.0	-41.8	0.3
1992	0.4	-9.2	-8.2	7.7	0.0	3.0	-47.6	0.6
1993	-2.0	-8.7	-2.5	4.5	0.0	3.9	-100.0	0.8
1994	-1.2	-6.4	0.4	7.5	1.4	4.7	0.0	2.1
1995P	-0.8	-6.6	1.4	6.4	1.5	2.7	0.0	1.8
Percentage distribution of debt								
1978	34.0	5.6	14.5	11.6	65.7	32.5	1.7	100.0
1979	34.3	7.8	14.2	9.8	66.1	32.2	1.7	100.0
1980	37.0	8.3	13.4	8.7	67.4	31.0	1.6	100.0
1981	40.8	8.2	12.3	7.7	69.0	29.7	1.4	100.0
1982	42.9	8.2	11.6	7.4	70.1	28.8	1.1	100.0
1983	43.0	8.3	11.3	8.1	70.7	28.5	0.9	100.0
1984	43.7	8.9	11.1	9.0	72.8	26.7	0.6	100.0
1985	42.1	9.8	11.3	10.7	73.9	25.8	0.3	100.0
1986	39.4	10.7	11.5	13.2	74.8	25.1	0.1	100.0
1987	37.2	11.4	11.4	16.4	76.4	23.5	0.1	100.0
1988	36.5	11.5	11.6	18.5	78.2	21.7	0.0	100.0
1989	35.4	10.8	12.0	20.6	78.8	21.1	0.0	100.0
1990	34.7	10.2	13.0	21.8	79.6	20.3	0.0	100.0
1991	33.8	9.4	12.7	23.2	79.1	20.9	0.0	100.0
1992	33.7	8.5	11.6	24.9	78.7	21.3	0.0	100.0
1993	32.7	7.7	11.8	25.8	78.0	22.0	0.0	100.0
1994	31.7	7.0	11.6	27.1	77.5	22.5	0.0	100.0
1995P	30.8	6.5	11.6	28.4	77.3	22.7	0.0	100.0

P = Preliminary 1/ Including Farmer Mac loans.

**Appendix table 3—Nonreal estate farm business debt by lender, December 31, 1978-95**

	Debt owed to reporting institutions				Individuals and others	Total nonreal estate	CCC crop loans
	Commercial banks	Farm Credit System	Farm Service Agency	Total			
Million dollars							
1978	26,718	14,878	5,086	46,682	14,011	60,693	4,646
1979	29,327	18,054	8,188	55,569	16,278	71,847	3,714
1980	29,986	19,750	10,029	59,765	17,367	77,132	3,836
1981	31,215	21,268	12,706	65,189	18,404	83,593	6,888
1982	34,322	20,558	12,977	67,857	19,139	86,996	15,204
1983	37,075	19,392	12,855	69,322	18,566	87,888	10,576
1984	37,619	18,092	13,740	69,451	17,640	87,091	8,428
1985	33,738	14,001	14,714	62,453	15,070	77,523	17,598
1986	29,678	10,317	14,425	54,420	12,143	66,563	19,190
1987	27,589	9,384	14,123	51,096	10,916	62,012	15,120
1988	28,309	8,766	12,899	49,974	11,760	61,734	8,902
1989	29,243	9,544	10,843	49,631	12,250	61,881	5,225
1990	31,267	9,848	9,374	50,490	12,740	63,230	4,377
1991	32,854	10,222	8,213	51,289	12,985	64,274	3,579
1992	32,912	10,346	7,143	51,401	13,230	63,631	4,771
1993	34,939	10,540	6,239	51,717	14,210	65,927	3,170
1994	36,730	11,180	6,020	53,930	15,190	69,120	6,237
1995P	37,525	12,941	5,389	55,855	16,170	72,025	4,000
Percent change in year							
1978	10.0	11.4	84.0	15.5	16.8	15.8	12.1
1979	9.8	21.3	61.0	19.0	16.2	18.4	-20.1
1980	2.2	9.4	22.5	7.6	6.7	7.4	3.3
1981	4.1	7.7	26.7	9.1	6.0	8.4	79.6
1982	10.0	-3.3	2.1	4.1	4.0	4.1	120.7
1983	8.0	-5.7	-0.9	2.2	-3.0	1.0	-30.4
1984	1.5	-6.7	6.9	0.2	-5.0	-0.9	-20.3
1985	-10.3	-22.6	7.1	-10.1	-14.6	-11.0	108.8
1986	-12.0	-26.3	-2.0	-12.9	-19.4	-14.1	9.0
1987	-7.0	-9.0	-2.1	-6.1	-10.1	-6.8	-21.2
1988	2.6	-6.6	-8.7	-2.2	7.7	-0.4	-41.1
1989	3.3	8.9	-15.9	-0.7	4.2	0.2	-41.3
1990	6.9	3.2	-13.5	1.7	4.0	2.2	-16.2
1991	5.1	3.8	-12.4	1.6	1.9	1.7	-18.2
1992	0.2	1.2	-13.0	0.2	1.9	-1.0	33.3
1993	6.2	1.9	-12.7	0.1	7.4	3.6	-33.6
1994	5.1	6.1	-3.5	4.3	6.9	4.8	96.8
1995P	2.2	15.7	-10.5	3.6	6.5	4.2	-35.9
Percentage distribution of debt							
1978	44.0	24.5	8.4	76.9	23.1	100.0	
1979	40.8	25.1	11.4	77.3	22.7	100.0	
1980	38.9	25.6	13.0	77.5	22.5	100.0	
1981	37.3	25.4	15.2	78.0	22.0	100.0	
1982	39.5	23.6	14.9	78.0	22.0	100.0	
1983	42.2	22.1	14.6	78.9	21.1	100.0	
1984	43.2	20.8	15.8	79.7	20.3	100.0	
1985	43.5	18.1	19.0	80.6	19.4	100.0	
1986	44.6	15.5	21.7	81.8	18.2	100.0	
1987	44.5	15.1	22.8	82.4	17.6	100.0	
1988	45.9	14.2	20.9	81.0	19.0	100.0	
1989	47.3	15.4	17.5	80.2	19.8	100.0	
1990	49.5	15.6	14.8	79.8	20.1	100.0	
1991	51.1	15.9	12.8	79.8	20.2	100.0	
1992	51.7	16.3	11.2	79.5	20.8	100.0	
1993	53.0	16.0	9.5	78.4	21.6	100.0	
1994	53.1	16.2	8.7	78.0	22.0	100.0	
1995P	52.1	18.0	7.5	77.5	22.5	100.0	

P = Preliminary

Appendix table 4—Interest rates on short- and intermediate-term loans, 1960-95

Agricultural nonreal estate									
Year	Prime rate	6-month T-Bill 1/	Commercial banks			Farm Credit System	FSA 2/		Average on out-standing debt 3/
			All banks	Large banks	Other banks		Regular	Limited resource	
Percent									
1960	4.82	NA	NA	NA	NA	NA	5.00	NA	6.58
1965	4.54	NA	NA	NA	NA	NA	5.00	NA	6.38
1970	7.91	6.87	NA	NA	NA	9.45	6.88	NA	7.84
1975	7.86	6.39	NA	NA	NA	9.11	8.63	NA	8.21
1980	15.27	12.39	15.20	16.70	15.00	12.74	11.00	6.82	11.70
1981	18.87	15.06	18.50	19.80	18.10	14.46	14.04	8.13	13.34
1982	14.86	11.96	16.70	16.10	17.00	14.58	13.73	10.75	13.31
1983	10.79	9.27	13.50	12.10	14.10	11.95	10.31	7.31	12.14
1984	12.04	10.46	14.10	13.10	14.40	12.47	10.25	7.25	11.88
1985	9.93	8.09	12.80	11.20	13.40	12.40	10.25	7.25	10.61
1986	8.33	6.30	11.50	9.60	12.10	11.23	8.66	5.66	10.23
1987	8.21	6.35	10.60	9.20	11.30	10.10	8.12	5.27	10.53
1988	9.32	7.27	11.20	10.20	11.60	10.56	9.02	6.02	10.50
I	8.59	6.35	11.00	9.70	11.60	10.48	9.00	6.00	NA
II	8.78	6.81	10.70	9.70	11.30	10.51	8.67	5.67	NA
III	9.71	7.63	11.50	10.70	11.80	10.43	9.00	6.00	NA
IV	10.18	8.27	11.60	11.10	11.80	10.82	9.42	6.42	NA
1989	10.88	8.50	12.50	12.10	12.70	11.68	9.10	6.10	10.64
I	10.98	9.09	12.30	12.10	12.40	11.63	9.40	6.40	NA
II	11.36	8.86	12.90	12.80	13.00	12.11	9.50	6.50	NA
III	10.66	8.12	12.50	12.00	12.80	11.55	9.00	6.00	NA
IV	10.50	7.91	12.10	11.60	12.50	11.41	9.42	5.50	NA
1990	10.01	7.87	11.40	10.90	12.30	11.16	8.90	5.82	10.76
I	10.04	8.11	11.80	11.20	12.30	11.20	8.50	5.50	NA
II	10.00	8.19	11.80	11.40	12.30	11.20	9.01	6.01	NA
III	10.00	7.82	10.90	10.20	12.30	11.14	9.08	6.08	NA
IV	10.00	7.36	11.50	11.00	12.20	11.10	9.00	5.67	NA
1991	8.47	5.72	9.80	9.00	11.30	10.10	8.25	5.00	9.86
I	9.19	6.34	10.40	9.60	11.60	10.59	8.50	5.00	NA
II	8.67	5.98	9.80	9.10	11.50	10.25	8.25	5.00	NA
III	8.40	5.74	10.10	9.40	11.50	10.02	8.25	5.00	NA
IV	7.60	4.82	9.00	8.10	10.70	9.59	8.01	5.00	NA
1992	6.25	3.69	7.80	6.80	9.40	8.20	6.79	5.00	8.59
I	6.50	4.16	8.00	6.80	9.70	8.51	7.17	5.00	NA
II	6.50	3.97	8.30	7.20	9.70	8.38	7.00	5.00	NA
III	6.01	3.30	7.80	6.80	9.40	8.09	7.00	5.00	NA
IV	6.00	3.34	7.40	6.30	8.90	7.81	6.00	5.00	NA
1993	6.00	3.23	7.50	6.70	8.70	8.09	5.88	5.00	8.29
I	6.00	3.20	7.60	6.60	8.80	8.35	6.33	5.00	NA
II	6.00	3.19	7.50	6.70	8.90	8.15	6.00	5.00	NA
III	6.00	3.22	7.50	7.00	8.60	8.08	5.75	5.00	NA
IV	6.00	3.32	7.30	6.70	8.60	7.77	5.42	5.00	NA
1994	7.14	4.83	7.70	7.10	8.75	8.23	6.46	5.00	8.91
I	6.02	3.57	7.20	6.50	8.20	7.46	5.25	5.00	NA
II	6.90	4.61	7.70	6.90	8.60	8.06	6.08	5.00	NA
III	7.50	5.11	7.70	7.30	9.00	8.44	7.25	5.00	NA
IV	8.13	6.02	8.20	7.70	9.20	8.96	7.25	5.00	NA
1995P	8.83	5.85	9.50	9.10	10.45	8.89	7.38	5.00	9.55
I	8.83	6.39	10.00	9.70	10.40	9.04	8.25	5.00	NA
II	9.00	5.91	9.40	8.90	10.30	8.96	7.92	5.00	NA
III	8.77	5.60	9.50	9.00	10.50	8.84	6.83	5.00	NA
IV	8.72	5.49	9.20	8.80	10.60	8.73	6.50	5.00	NA

NA = Not Available. P = preliminary for FCS. 1/ Auction average investment yield. 2/ New operating loans. 3/ Average on outstanding farm business debt.



**Appendix table 5—Interest rates on long-term loans, 1960-95**

Agricultural real estate								
Year	U.S. Treasury bond 1/	Commercial banks	Farm Credit System	Life insurance companies	FSA 2/		Average on outstanding debt 3/	Average on total farm debt 4/
					Regular	Limited resource		
Percent								
1960	4.02	NA	NA	NA	5.00	NA	5.01	5.79
1965	4.21	NA	NA	NA	5.00	NA	5.36	5.84
1970	6.58	8.27	8.68	9.31	5.00	NA	5.88	6.73
1975	7.00	9.02	8.69	10.03	5.00	NA	6.98	7.55
1980	10.81	13.76	10.39	13.21	11.05	4.82	8.17	9.82
1981	12.87	16.75	11.27	15.42	13.00	5.50	8.91	10.95
1982	12.23	16.63	12.27	15.51	12.94	6.50	9.60	11.31
1983	10.84	13.76	11.63	12.47	10.79	5.27	9.70	10.83
1984	11.99	14.07	11.76	13.49	10.75	5.25	9.41	10.54
1985	10.75	12.96	12.24	12.61	10.75	5.25	8.73	9.57
1986	8.15	11.56	11.61	11.96	9.13	5.06	8.76	9.39
1987	8.64	11.07	11.10	10.21	8.90	5.00	8.94	9.62
1988	8.98	11.42	10.10	10.05	9.46	5.00	9.24	9.79
I	8.61	11.04	9.88	10.13	9.50	5.00	NA	NA
II	9.06	11.18	9.82	9.90	9.17	5.00	NA	NA
III	9.20	11.60	10.06	10.08	9.50	5.00	NA	NA
IV	9.03	11.84	10.56	10.70	9.67	5.00	NA	NA
1989	8.59	12.08	10.93	10.47	9.46	5.00	9.52	10.02
I	9.19	12.36	10.82	10.71	9.50	5.00	NA	NA
II	8.84	12.18	11.01	10.54	9.17	5.00	NA	NA
III	8.25	11.98	10.62	10.23	9.50	5.00	NA	NA
IV	8.07	11.78	10.65	10.40	9.67	5.00	NA	NA
1990	8.73	11.69	10.56	10.25	8.94	5.00	9.58	10.12
I	8.60	11.74	10.62	9.62	8.75	5.00	NA	NA
II	8.81	11.68	10.67	10.10	9.09	5.00	NA	NA
III	8.91	11.72	10.49	10.30	9.08	5.00	NA	NA
IV	8.61	11.60	10.45	10.97	9.00	5.00	NA	NA
1991	8.16	10.76	9.85	10.01	8.73	5.00	8.93	9.36
I	8.28	11.24	10.19	10.52	8.83	5.00	NA	NA
II	8.39	11.04	9.96	9.99	8.75	5.00	NA	NA
III	8.21	10.76	9.84	9.85	8.75	5.00	NA	NA
IV	7.76	10.00	9.42	9.68	8.58	5.00	NA	NA
1992	7.55	9.45	8.25	8.74	8.13	5.00	8.44	8.51
I	7.73	9.72	8.43	9.09	8.25	5.00	NA	NA
II	7.90	9.66	8.56	9.30	8.25	5.00	NA	NA
III	7.22	9.22	8.13	8.59	8.25	5.00	NA	NA
IV	7.34	9.18	7.86	7.97	7.75	5.00	NA	NA
1993	6.45	8.64	7.83	7.60	7.29	5.00	7.75	8.00
I	6.90	8.88	8.20	7.34	7.75	5.00	NA	NA
II	6.62	8.70	7.80	7.77	7.42	5.00	NA	NA
III	6.15	8.56	7.79	7.65	7.25	5.00	NA	NA
IV	6.14	8.42	7.54	7.62	6.75	5.00	NA	NA
1994	7.41	9.20	8.57	8.05	7.42	5.00	7.97	8.41
I	6.53	8.60	7.99	7.60	6.50	5.00	NA	NA
II	7.41	9.08	8.37	7.95	7.17	5.00	NA	NA
III	7.66	9.26	8.70	8.13	8.00	5.00	NA	NA
IV	8.05	9.86	9.21	8.40	8.00	5.00	NA	NA
1995P	6.94	9.97	8.95	9.70	7.96	5.00	8.01	8.74
I	7.71	10.22	9.10	9.70	8.75	5.00	NA	NA
II	7.00	10.08	9.10	9.71	8.25	5.00	NA	NA
III	6.75	9.90	8.85	9.65	7.50	5.00	NA	NA
IV	6.28	9.69	8.74	9.60	7.33	5.00	NA	NA

NA = Not Available. P = preliminary for commercial banks and the Farm Credit System. 1/ Unweighted average of rates on all outstanding bonds neither due nor callable in less than 10 years. 2/ New farm ownership loans. 3/ Average on outstanding farm business debt. 4/ Both real and nonreal estate loans.

**Appendix table 6—Commercial bank real estate lending, by type of bank, June 30, 1995**

Bank group	Commercial banks	Real estate loans/ total loans	Nonperforming real estate loans/ total real estate loans 1/	Total nonperforming loans/ total loans	Nonperforming real estate/ nonperforming loans	Weak banks 2/
	<i>Number</i>	<i>Percent</i>				<i>Number</i>
All banks	10,117	41.9	1.61	1.26	53.7	17
Agricultural	3,488	45.4	0.97	1.07	41.2	4
Small nonagricultural	5,986	61.0	1.09	1.10	60.8	13
Large nonagricultural	643	38.1	1.81	1.30	53.1	0
Urban	4,412	40.3	1.73	1.30	53.8	11
Rural	5,705	54.2	0.93	0.95	52.8	6

1/ Nonperforming loans are loans that are past due 90 days or more and still accruing interest plus loans in nonaccrual status. 2/ Weak banks are banks with nonperforming loans in excess of total capital.

Source: Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

**Appendix table 7—Banks reporting nonperforming loans greater than capital, 1985-95 1/**

Year 2/	Agricultural banks		Nonagricultural banks		Total banks	
	<i>Number</i>	<i>Percent</i>	<i>Number</i>	<i>Percent</i>	<i>Number</i>	<i>Percent</i>
1985	141	2.91	130	1.38	273	1.91
1986	158	3.36	230	2.47	388	2.77
1987	84	1.88	241	2.67	325	2.41
1988	54	1.25	238	2.76	292	2.30
1989	31	.74	181	2.14	212	1.68
1990	13	.32	130	1.58	143	1.17
1991	13	.33	107	1.35	120	1.01
1992	5	.13	55	.73	60	.53
1993	2	.05	30	.42	32	.29
1994	2	.06	17	.25	19	.18
1995	4	.11	13	.20	17	.17

1/ Nonperforming loans are loans that are past due 90 days or more and still accruing interest plus loans in nonaccrual status. Total capital includes total equity allowance for loan and lease losses, minority interest in consolidated subsidiaries, subordinated notes and debentures, and total mandatory convertible debt. 1994 numbers are as of June 30, all others are December 31.

Source: Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

**Appendix table 8—Commercial bank failures, 1982-95 1/**

Year	Agricultural banks		Nonagricultural banks		Total banks	
	<i>Number 2/</i>	<i>Percent 3/</i>	<i>Number</i>	<i>Percent</i>	<i>Number</i>	<i>Percent</i>
1982	10	0.19	23	0.25	33	0.23
1983	7	0.14	37	0.40	44	0.31
1984	31	0.62	47	0.50	78	0.54
1985	69	1.42	49	0.52	118	0.83
1986	66	1.41	78	0.84	144	1.03
1987	75	1.67	127	1.41	202	1.50
1988	41	0.95	180	2.09	221	1.71
1989	22	0.53	184	2.18	206	1.63
1990	18	0.44	141	1.76	159	1.30
1991	10	0.25	98	1.24	108	0.91
1992	7	0.18	93	1.23	100	0.88
1993	3	0.08	33	0.46	36	0.33
1994	0	0.00	11	0.16	11	0.11
1995 4/	0	0.00	5	0.08	5	0.05
Total	359	NA	1,106	NA	1,465	NA

NA=Not available. 1/ Counts of failures exclude mutual savings banks, savings and loan associations, commercial banks not insured by the FDIC, and bank branches headquartered in U.S. possessions and territories. Failures are those declared insolvent and closed by their chartering authorities plus those granted open bank assistance by the FDIC. 2/ Agricultural bank status is based on June loan data from the year prior to the bank's failure. 3/ Failures during the year as a percentage of total banks of this type remaining at the end of the year. 4/ Percentages for 1995 use June 30, 1995, data on numbers of banks in the denominators.

Sources: Calculated from information provided by the Federal Deposit Insurance Corporation and the Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

**Appendix table 9—Characteristics of Farmer Mac I loan pools**

Pooler	Guarantee date	Loans	Total principal	Average		
				Loan size	Interest rate	Maturity date
		<i>Number</i>	<i>-----Dollars-----</i>		<i>Percent</i>	
John Hancock Insurance Company	12/91	512	112,287,347	219,311	9.810	1/11/96
Chemical Securities, Inc.	5/92	790	233,389,529	296,143	10.030	10/27/96
Prudential Agricultural Credit, Inc.	6/92	603	237,928,363	394,574	10.260	10/10/99
Equitable Agri-Business, Inc.	10/92	374	97,677,004	311,073	10.050	5/1/98
Prudential Securities and Equitable Agri-Business	8/94	92	33,726,095	366,588	9.380	7/15/08
Western Farm Credit Bank	2/95	166	71,343,669	429,781	8.165	7/1/13
Prudential Securities and Equitable Agri-Business 1/	5/95	115	41,221,940	358,452	9.610	7/15/08

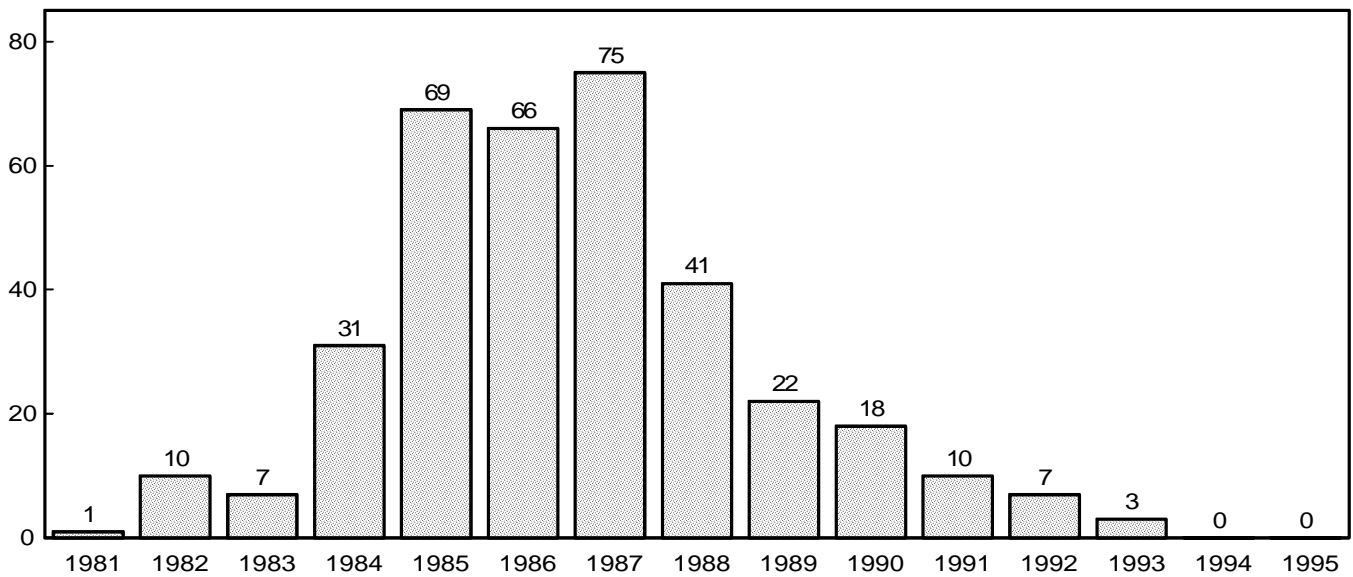
1/ The pool included the loans in the pool previously securitized by Prudential Securities and Equitable Agri-Business in August 1994.

Source: Federal Agricultural Mortgage Corporation.

Appendix Figure 1

# **Agricultural bank failures**

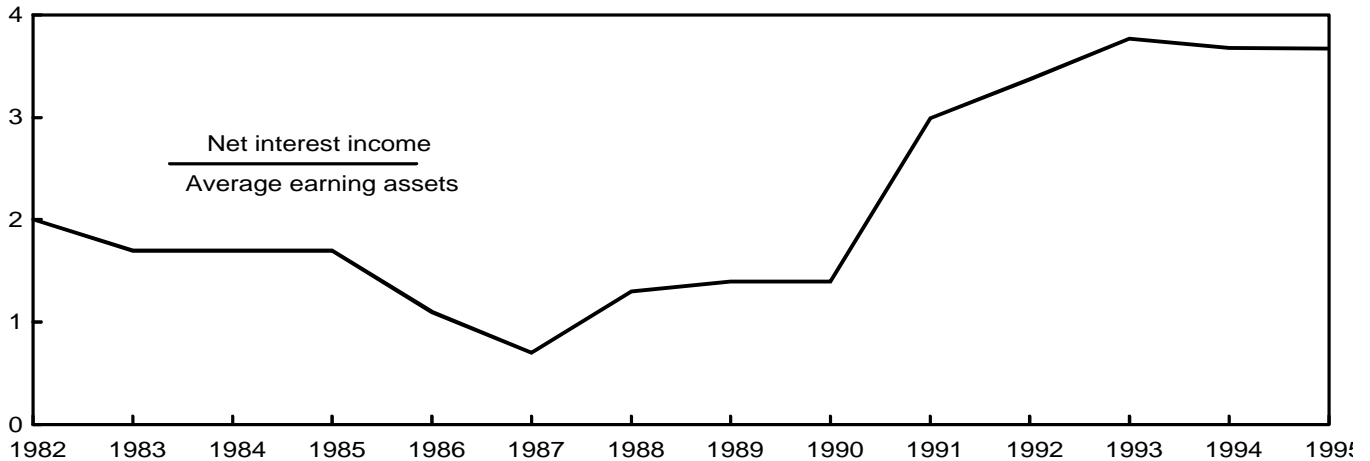
Number



Appendix Figure 2

# **Interest margins for Farm Credit Banks displayed increases from 1990-95\***

Percent



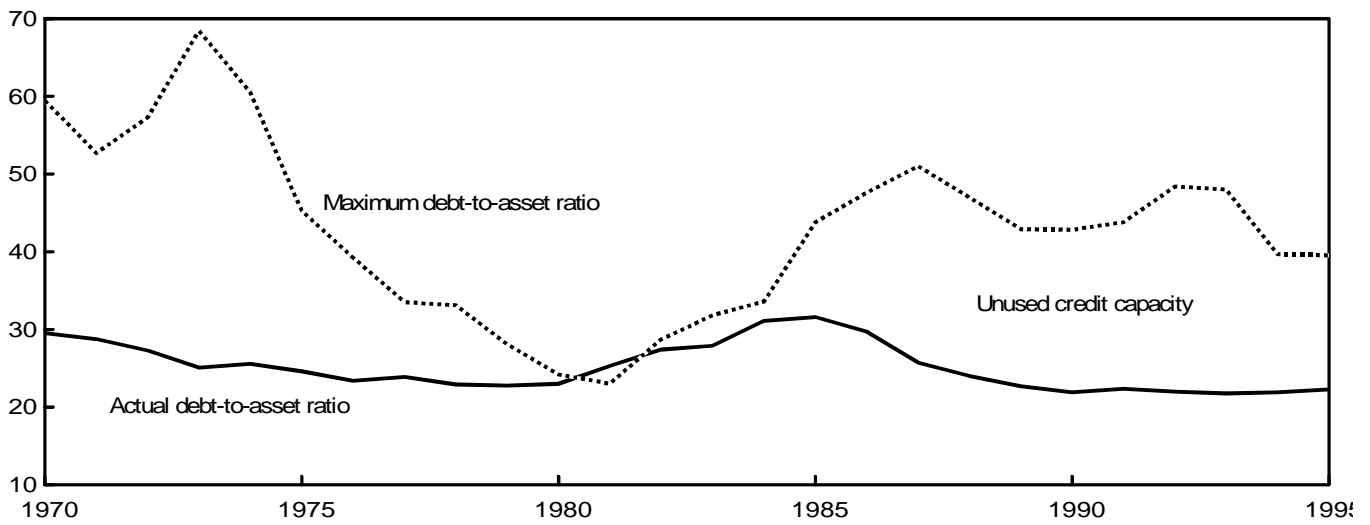
\* Net interest income as a percentage of average earning assets. Average earning assets consist of gross loans plus cash and investments. Data represent combined totals for Farm Credit Banks and Associations.

Source: "Summary Report of Condition: Performance of the Farm Credit System," Various Dates, Federal Farm Credit Banks Funding Corporation, Jersey City, NJ.

Appendix Figure 3

### Farm borrowing is below estimated credit limits

Percent



Values for 1994 and 1995 are forecasts.

Appendix Figure 4

### Agricultural bank loan-to-deposit ratios, 1961-1995

Percent

